

# **Exhibit 32**

**CONFIDENTIAL SUBJECT TO PROTECTIVE ORDER**

1 UNITED STATES DISTRICT COURT  
2 SOUTHERN DISTRICT OF NEW YORK  
3  
4 SECURITIES AND EXCHANGE )  
COMMISSION, )  
5 )  
Plaintiff, )  
6 ) Case No.  
v. ) 20-Civ-10832 (AT) (SN)  
7 )  
RIPPLE LABS, INC., BRADLEY )  
8 GARLINGHOUSE, and CHRISTIAN )  
LARSEN, )  
9 )  
Defendants. )  
10 )  
11

12 \*\*CONFIDENTIAL - SUBJECT TO PROTECTIVE ORDER\*\*  
13

14 VIDEOTAPED DEPOSITION OF  
15 DR. PETER ADRIAENS  
16 Tuesday, February 8, 2022  
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22

23 Reported by:  
24 BRIDGET LOMBARDOZZI,  
CSR, RMR, CRR, CLR  
25 Job No. 220208BLO

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UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF NEW YORK

SECURITIES AND EXCHANGE )  
COMMISSION, )  
Plaintiff, )  
v. ) Case No.  
20-Civ-10832 (AT) (SN)  
RIPPLE LABS, INC., BRADLEY )  
GARLINGHOUSE, and CHRISTIAN )  
LARSEN, )  
Defendants. )  
\_\_\_\_\_)

Videotaped deposition of DR. PETER ADRIAENS  
taken on behalf of Plaintiff at the offices of Debevoise  
& Plimpton, 919 Third Avenue, New York, New York,  
commencing at 9:07 a.m. and ending at 6:21 p.m., on  
Tuesday, February 8, 2022, before Bridget Lombardozzi,  
CCR, RMR, CRR, CLR, and Notary Public of the States of  
New York and New Jersey, pursuant to notice.

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1 A P P E A R A N C E S (All appearing remotely):

2

3

4 For the Plaintiff:

5

6

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1 A P P E A R A N C E S (Continued):

2

3 For Defendant Ripple Labs Inc. and the Witness:

4

5

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7 BY: LISA ZORNBERG, ESQUIRE

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20

21 -and-

22

23

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1 A P P E A R A N C E S (Continued):

2

3 For Defendant Ripple Labs Inc. and the Witness:

4

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1 A P P E A R A N C E S (Continued):

2

3 For Defendant Christian A. Larsen:

4

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12 jward@paulweiss.com

13

14 ALSO PRESENT:

15

16 REBECCA MATSUMARA, Ripple

17 STELLA UVAYDOVAS, SEC

18 JAMES BRADY, Videographer  
19 Shereck Video Service

20

21

22

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10	EXHIBITS		
11	SEC PA		
12	NUMBER	DESCRIPTION	PAGE
13	Exhibit 1	Expert Report of Dr. Peter	13
14		Adriaens dated 10-4-21	
15		NO BATES, 137 pages	
16			
17	Exhibit 2	Rebuttal Report of Dr. Peter	14
18		Adriaens dated 11-12-21	
19		NO BATES, 34 pages	
20			
21	Exhibit 3	Expert Report of Dr. [REDACTED]	202
22		[REDACTED] dated 10-4-21	
23		NO BATES, 46 pages	
24			
25			



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1	EXHIBITS		
2	SEC PA		
3	NUMBER	DESCRIPTION	PAGE
4	Exhibit 22	Printout from XRPL.org	171
5		Consensus Protections Against	
6		Attacks and Failure Modes	
7		NO BATES, 3 pages	
8			
9	Exhibit 23	11-10-21 Status of Analysis	131
10		of Halt on 11-3-21	
11		NO BATES, 2 pages	
12			
13	Exhibit 24	Printout from amazon.com	154
14		"What is Decentralization in	
15		Blockchain/"	
16		NO BATES, 7 pages	
17			
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1 DEPOSITION SUPPORT INDEX

2

3 DIRECTION TO WITNESS NOT TO ANSWER

4 Page Line

5 16 19

6 18 25

7 149 14

8 171 10

9 276 12

10

11 STIPULATIONS

12 Page Line

13 - -none- -

14

15

16 PORTION MARKED HIGHLY CONFIDENTIAL

17 Page Line

18 - -none- -

19

20

21 REQUEST FOR DOCUMENTS

22 Page Line

23 - -none- -

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9:07 a.m.  
February 8, 2022  
- - -

09:06:23  
  
  
  
09:06:35  
  
  
09:06:44  
  
  
  
09:06:55  
  
  
  
09:06:59

THE VIDEOGRAPHER: We're on  
the record. The time is 9:07 a.m.  
Today's date is February 8th, 2022.  
This is Disk 1 of the video deposition  
of Peter Adriaens in the matter of the  
SEC versus Ripple Labs.  
  
My name is Jim Brady. I'm  
the videographer with Gradillas Court  
Reporting. Today's court reporter is  
Bridget Lombardozzi, also with  
Gradillas Court Reporting. We're here  
today at the office of Debevoise &  
Plimpton, 919 Third Avenue, New York,  
New York.  
  
All attorney appearances will  
appear on the transcript.  
  
I ask now that the court  
reporter please swear in the witness.  
  
P E T E R A D R I A E N S,  
having been duly sworn, was examined  
and testified as follows:

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09:07:13 1 THE REPORTER: Thank you.  
2 You may proceed.  
3 DIRECT-EXAMINATION  
4 BY MR. SYLVESTER:  
09:07:15 5 Q. Good morning, Professor.  
6 Could you please state your name for the  
7 record.  
8 A. Peter Adriaens.  
9 Q. And I'm Mark Sylvester. I'm an attorney  
09:07:22 10 with the SEC, the plaintiff in this okay. I'm  
11 here with my colleagues, Daphna Waxman and Jon  
12 Daniels. There are other of my colleagues joining  
13 us on Zoom today.  
14 Are you represented by counsel here  
09:07:32 15 today?  
16 A. No, I'm not.  
17 Q. Have you had your deposition taken  
18 before, Professor?  
19 A. Can you repeat the question?  
09:07:39 20 Q. Sure.  
21 Have you had your deposition taken  
22 before?  
23 A. My deposition or a deposition?  
24 Q. Your deposition. Have you been deposed?  
09:07:48 25 A. I have been deposed, yes.

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09:07:50 1 Q. How many times?  
2 A. Three or four times.  
3 Q. Okay. Is there anything that would  
4 prevent you from testifying fully and truthfully  
09:07:57 5 here today?  
6 A. No.  
7 Q. Were you retained to provide expert  
8 services in this case?  
9 A. Yes, I was.  
09:08:06 10 Q. Who retained you?  
11 A. Debevoise & Plimpton and Kellogg Hansen.  
12 Q. Were you retained on behalf of Ripple  
13 Labs only or all defendants?  
14 A. It was on behalf of all defendants.  
09:08:19 15 Q. Okay. If I say "Ripple" today, I mean  
16 Ripple Labs, the defendant in this case. Okay?  
17 A. Okay.  
18 Q. Are you familiar with the term "XRP"?  
19 A. Yes, I am.  
09:08:28 20 Q. Are you familiar with the term "digital  
21 asset"?  
22 A. Yes, I am.  
23 Q. Are you familiar with the term "XRP  
24 Ledger"?  
09:08:35 25 A. Yes, I am.

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09:08:36 1 Q. What is the XRP Ledger?

2 A. It is an open permissionless blockchain.

3 THE REPORTER: Permissless?

4 THE WITNESS: Permissionless

09:08:47 5 blockchain.

6 THE REPORTER: Thank you.

7 BY MR. SYLVESTER:

8 Q. Is there only one XRP Ledger or are  
9 there multiple ledgers?

09:09:01 10 A. As far as I know, there's one XRP  
11 Ledger.

12 Q. Professor, let me hand you what's been  
13 marked Exhibit 1.

14 (Whereupon, exhibit is  
09:09:10 15 received and marked SEC Adriaens  
16 Exhibit 1 for identification.)

17 BY MR. SYLVESTER:

18 Q. I'm going to hand you a copy and ask  
19 counsel to pass it down. There we go.

09:09:23 20 And, Professor, is Exhibit 1 your expert  
21 report of October 4th, 2021?

22 A. Yes, it is.

23 Q. Okay. Turning to the page following  
24 page 70, is that your signature on that page?

09:09:49 25 A. Yes, it is.

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09:09:50 1 Q. Okay.

2 (Whereupon, exhibit is  
3 received and marked SEC Adriaens  
4 Exhibit 2 for identification.)

09:09:52 5 BY MR. SYLVESTER:

6 Q. Let me hand you what's been marked PA-2.  
7 Is PA-2 your expert rebuttal report of  
8 November 12th, 2021?

9 A. Yes, it is.

09:10:12 10 Q. And turning to the page following page  
11 31 of Exhibit 2, is that your signature on that  
12 page?

13 A. Yes, it is.

14 Q. Have you finished all of the work that  
09:10:27 15 you were assigned to do in this case?

16 A. I did.

17 Q. Are you planning on providing any  
18 supplemental reports?

19 A. No, I'm not.

09:10:38 20 Q. Okay. Who wrote Exhibit 1?

21 MR. WHITE: Objection.

22 I'm going to instruct you not  
23 to answer --

24 THE REPORTER: I can't hear  
09:10:44 25 you, sir.

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09:10:45 1 MR. WHITE: Exhibit 1?  
2 MR. SYLVESTER: Yeah. His  
3 expert report.  
4 MR. WHITE: You can answer  
09:10:50 5 that question. We'll take this one at  
6 a time.  
7 A. I wrote the expert report.  
8 Q. Okay. Did anyone help you draft Exhibit  
9 1?  
09:10:58 10 MR. WHITE: You can answer  
11 that yes or no.  
12 A. Yes.  
13 Q. Okay. Who provided help in drafting  
14 Exhibit 1?  
09:11:12 15 A. I went through multiple iterations with  
16 counsel.  
17 Q. Which attorneys?  
18 A. Are you asking for specific names?  
19 Q. Yes.  
09:11:24 20 A. It was multiple.  
21 Q. Can you recall any of the names sitting  
22 here today?  
23 A. Collin White. Chris.  
24 Q. Chris Ford?  
09:11:37 25 A. Yes.



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09:11:38 1 Lisa.

2 Q. Lisa Zornberg?

3 A. Lisa Zornberg. And others that were  
4 on -- in various discussions.

09:11:47 5 Q. Apart from counsel, did anyone else help  
6 you prepare your report?

7 A. I had one of my students or staff in the  
8 Center for Smart Infrastructure Finance at the  
9 University of Michigan help.

09:12:02 10 Q. Who is that?

11 A. The name of the student?

12 Q. Yes.

13 A. Kenneth Chung.

14 Q. Apart from Mr. Chung and counsel, did  
09:12:16 15 anyone else help you prepare your report?

16 A. No.

17 Q. Okay. Other than yourself, did anyone  
18 draft any part of Exhibit 1?

19 MR. WHITE: I'm going to  
09:12:31 20 instruct not to answer. That gets  
21 into attorney work product, so we're  
22 not going to go into those details.

23 MS. SMITH: Okay. So your  
24 position is that if counsel drafted a  
09:12:39 25 portion of this expert report, that's

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09:12:40 1 privileged?

2 MR. WHITE: Our position is  
3 that work product protects the  
4 drafting process and you're asking a  
09:12:47 5 question that goes to that. So the  
6 answer to that question is yes.

7 BY MR. SYLVESTER:

8 Q. Okay. Did anyone provide comments to  
9 Exhibit 1?

09:12:59 10 MR. WHITE: You can answer  
11 that question yes or no.

12 A. Yes.

13 Q. Was it all the same people that we've  
14 already discussed: Ms. Zornberg, Mr. White,  
09:13:06 15 Mr. Ford, and your student?

16 A. It was part of the same discussions,  
17 yes.

18 Q. Okay. Did you incorporate counsel's  
19 comments into the final version of Exhibit 1?

09:13:15 20 MR. WHITE: You can -- you  
21 can answer that question yes or no.

22 A. Is your question did I incorporate or  
23 did I consider them?

24 Q. Did you incorporate counsel's comments  
09:13:28 25 into the final version of Exhibit 1?

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09:13:31 1 A. You'll have to be more specific  
2 regarding which comments. I considered all  
3 comments that I received.

4 Q. I see.

09:13:39 5 Were there some comments that you  
6 incorporated?

7 A. There may have been.

8 Q. Who wrote Exhibit 2?

9 MR. WHITE: Same instruction,  
09:13:48 10 please. You can answer that question.

11 A. I did.

12 Q. Okay. Did anyone help you draft Exhibit  
13 2?

14 A. The same people I referred to earlier.

09:14:00 15 Q. The same people you referred to that  
16 helped you draft Exhibit 1, is that right?

17 A. Yes, sir.

18 Q. Okay.

19 A. Except for the student. He was not  
09:14:09 20 involved in that one.

21 Q. I see. So counsel only.

22 A. Yes.

23 Q. Okay. Did any of your -- did any of  
24 Ripple's counsel draft any part of Exhibit 2?

09:14:17 25 MR. WHITE: I'm going to

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09:14:18 1           instruct not to answer that question,  
2           again on the same basis.

3           Q.   Did counsel provide comments to Exhibit  
4 2?

09:14:24 5                       MR. WHITE:  You can answer  
6           that question yes or no.

7           A.   Yes.

8           Q.   Did you incorporate counsel's comments  
9 into the final version of Exhibit 2?

09:14:32 10          A.   I considered them.

11          Q.   Did you incorporate any of counsel's  
12 comments into the final version of Exhibit 2?

13          A.   I can't be specific unless we go to a  
14 specific section.

09:14:43 15          Q.   And sitting here today, do you recall  
16 incorporating any of counsel's comments into  
17 Exhibit 2?

18                       MR. WHITE:  You can answer  
19           that yes or no.

09:14:50 20          A.   Yes.

21          Q.   Okay.  Are all of the opinions that you  
22 are offering in this case set forth either in  
23 Exhibit 1 or Exhibit 2?

24          A.   Yes.

09:15:04 25          Q.   And sitting here today, do you have any

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09:15:05 1 plans to offer any additional opinions that are  
2 not in Exhibit 1 or 2?

3 A. I am not planning on offering any  
4 additional opinions. However, I would like to  
09:15:15 5 make a clarification to some of the language in  
6 Exhibit 1.

7 Q. Okay. Is there an error in Exhibit 1?

8 A. There's unclear description -- unclear  
9 language in the description of the methodology  
09:15:31 10 that I used to arrive at Exhibit D.

11 Q. I see.

12 What paragraph is that?

13 A. That would be page -- page 64, paragraph  
14 124, and page 65, paragraph 125.

09:15:58 15 Q. Okay. Thank you.

16 Is Appendix A to Exhibit 1 your CV,  
17 Professor?

18 A. Yes, it is.

19 Q. And it's obviously quite lengthy, so I  
09:16:14 20 won't ask you to review it right now.

21 So just sitting here today, are you  
22 aware of any inaccuracies in your CV?

23 A. As far as I know, it was updated as of  
24 October 4th, 2021.

09:16:31 25 Q. Okay. And is your -- strike that.

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09:16:33 1 Does the education section of your CV  
2 accurately list the degrees that you earned?

3 A. Apologies. What was the question?

4 Q. Does the education section --

09:16:44 5 A. Oh.

6 Q. -- of your CV accurately list the  
7 degrees that you earned?

8 A. Yes.

9 Q. Okay. Have you had any formal education  
09:16:52 10 after 1992?

11 A. As in degree? No additional degree.

12 Q. Okay. Have you taken any computer  
13 science courses?

14 A. Yes.

09:17:08 15 Q. Okay. When did you take -- when did you  
16 last take a computer science course?

17 A. Fifteen years -- I'm not exactly sure.  
18 Maybe 15 years ago when I switched my career.

19 Q. Have you ever taken any course specific  
09:17:29 20 to blockchain technology?

21 A. I teach a course on blockchain  
22 technology.

23 Q. Prior to your teaching engagement, did  
24 you ever take any course regarding blockchain  
09:17:38 25 technology?

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09:17:38 1 A. There were at that time no courses  
2 available in blockchain technology.

3 Q. At the time of your formal education you  
4 mean?

09:17:44 5 A. At the time of formal education. At the  
6 time when I switched to the Business School at the  
7 University of Michigan in 2006.

8 Q. Have you ever held any professional  
9 licenses?

09:18:06 10 A. I have a professional engineering  
11 license.

12 Q. Has that license ever been revoked or  
13 suspended?

14 A. No, it has not.

09:18:12 15 Q. Have you ever been the subject of any  
16 disciplinary action related to your professional  
17 activities?

18 A. No.

19 Q. Okay. You've been a professor at the  
09:18:21 20 University of Michigan since 1992?

21 A. Yes.

22 Q. Apart from the course that you just told  
23 me about blockchain technology, have you ever  
24 taught a computer science course at the University  
09:18:33 25 of Michigan?

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09:18:34 1 A. I have not taught a computer science  
2 course.

3 Q. Okay. And when did you first teach a  
4 blockchain technology course?

09:18:49 5 A. 2016.

6 Q. Okay.

7 A. I started teaching finance and financial  
8 technology and blockchain courses in 2016.

9 Q. Have you ever taught a course  
09:19:00 10 exclusively devoted to blockchain?

11 A. No. There's no such course available  
12 currently at the University of Michigan.

13 Q. You've served as an expert witness prior  
14 to this case, is that right?

09:19:15 15 A. I currently serve, yes.

16 Q. And prior to your engagement in the case  
17 against Ripple Labs, you've served as an expert  
18 witness in other cases?

19 A. I have, yes.

09:19:25 20 Q. Okay. Page 35 of your CV lists your  
21 litigation expert witness work, is that right?

22 A. Yes.

23 Q. Are these seven engagements the totality  
24 of your litigation expert witness work or were  
09:19:54 25 there any other engagements?



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09:19:55 1 MR. WHITE: Objection to the  
2 form of that last question.

3 A. These were -- these were the  
4 engagements, yes.

09:20:18 5 Q. These were all of your expert witness  
6 engagements?

7 A. Yes.

8 Q. Okay. Taking a look at page 35, what  
9 were the names of the cases that these engagements  
09:20:34 10 involved for these seven assignments?

11 A. I do not exactly recall.

12 Q. You don't recall any of the names of any  
13 of the seven cases?

14 A. Not of the cases, no.

09:20:50 15 Q. In each of these cases, did you provide  
16 an expert report?

17 A. Yes.

18 Q. In any of these cases, did your expert  
19 report involve blockchain technology?

09:21:03 20 A. No.

21 Q. Have you ever been qualified by a court  
22 as an expert in blockchain technology?

23 A. By a court? No.

24 Q. Prior to this case, had you been  
09:21:17 25 retained as an expert in any case involving

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09:21:20 1 digital assets?

2 A. No.

3 Q. In any of these seven cases, were you  
4 retained by the plaintiff?

09:21:31 5 A. I was not.

6 Q. In any of these seven cases, was any  
7 governmental entity a party?

8 A. I don't believe so.

9 Q. Has your expert testimony ever been  
09:22:11 10 excluded in whole or in part?

11 A. No.

12 Q. Has any portion of an expert report you  
13 submitted ever been excluded in whole or in part?

14 A. Sorry. Can you repeat that question?

09:22:25 15 Q. Sure.

16 Has any expert report that you submitted  
17 ever been excluded in whole or in part?

18 A. No.

19 Q. Has any expert affidavit that you  
09:22:43 20 submitted as part of a case ever been excluded in  
21 whole or in part?

22 A. Not that I recall.

23 Q. What are you an expert in, Professor?

24 A. I'm an expert in finance,  
09:22:58 25 entrepreneurial business development, and

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09:23:01 1 financial technology.

2 Q. What --

3 A. Particularly focused on applications in  
4 various different digital industries.

09:23:17 5 Q. Do you consider yourself an expert in  
6 blockchain technology?

7 A. Yes.

8 Q. When did you first learn of the  
9 existence of blockchain technology?

09:23:31 10 A. I don't exactly recall, but it was at  
11 least between five and ten years ago.

12 Q. Have you off -- strike that.

13 Have you authored any academic papers on  
14 the topic of blockchain technology?

09:23:50 15 A. Yes.

16 Q. How many?

17 A. I'm going to have to look at my resume.

18 Q. That's fine. Also feel free to  
19 approximate. I don't need an exact number.

09:24:12 20 A. Probably a half dozen.

21 Q. When did you first publish a paper on  
22 the topic of blockchain technology?

23 A. When you refer to "the topic of  
24 blockchain technology," that is very broad.

09:24:25 25 Is there a specific aspect of that that

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09:24:29 1 you want to refer to?

2 Q. Well, of the six that you just  
3 mentioned, when was the first of those six  
4 published?

09:24:47 5 A. I think 2018, I believe.

6 Q. Were any of the six that you just  
7 mentioned peer reviewed?

8 A. Yes.

9 Q. All six of them?

09:24:57 10 A. I'm going to have to take a look at --

11 Q. Sure.

12 A. -- the six that I referred to.

13 Q. When you find the items that you're  
14 looking for, Professor, will you just call them  
09:25:43 15 out?

16 A. Yes, I will.

17 Q. Thanks.

18 A. On page 14, under "Journal Publications  
19 (Published)," 4, 5, and 6. And on page 19, under  
09:26:53 20 "Refereed Conference Papers," 3 and 4. And the  
21 rest were book chapters or -- which are typically  
22 not refereed, and nonrefereed abstracts.

23 Q. Were the five papers that you just  
24 identified all peer reviewed?

09:27:34 25 A. Yes.

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09:27:35 1 Q. Do any of your publications address the  
2 topic of decentralization of blockchains?

3 A. What do you mean with addressing it?

4 Q. Is that the topic of the paper?

09:27:53 5 A. It is not the topic of the paper, but I  
6 do bring up the concept of decentralization in  
7 these papers.

8 Q. Are you familiar with the term  
9 "consensus theory"?

09:28:03 10 A. I'm familiar with consensus.

11 Q. Okay. Do -- do any of your publications  
12 address the topic of consensus?

13 A. Again, it's not the topic of the paper,  
14 but it is part of the descriptions within the  
09:28:19 15 paper.

16 Q. Okay. Are you familiar with the  
17 Byzantine generals problem?

18 A. At the high level? Yes.

19 Q. Okay. Do any of your publications  
09:28:29 20 address the topic of the Byzantine generals  
21 problem?

22 A. They do not.

23 Q. Okay. Do any of your publications  
24 compare the relative decentralization of two or  
09:28:41 25 more blockchains?

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09:28:46 1 A. Relative? Sorry. Can you repeat that  
2 question?

3 Q. Sure.

4 Do any of your publications compare the  
09:28:51 5 relative decentralization of two or more  
6 blockchains?

7 A. I am not sure what the question means.

8 Q. Do any of your publications examine  
9 whether one blockchain is more decentralized than  
09:29:08 10 another blockchain?

11 A. No, they do not.

12 Q. Have you ever designed a blockchain  
13 yourself?

14 THE REPORTER: Repeat.

09:29:14 15 MR. SYLVESTER: Sure.

16 Q. Have you ever designed a blockchain  
17 yourself?

18 A. I have not.

19 Q. Have you ever contributed code to a  
09:29:24 20 blockchain in development?

21 A. My students have. I have not.

22 Q. Thank you.

23 Have you contributed a proposed  
24 improvement to an existing blockchain?

09:29:39 25 A. I have not.

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09:29:39 1 Q. Okay. Is it fair to say that you began  
2 to focus your professional efforts on blockchain  
3 in 2015?

4 A. It became part of the teachings and  
09:29:50 5 research, yes.

6 Q. You supervise a research group at the  
7 University of Michigan?

8 A. Yes, I do.

9 Q. Does that group conduct any research on  
09:30:03 10 consensus?

11 A. "Consensus" is a very broad question, so  
12 if we could narrow -- narrow it down further.

13 Q. Sure.

14 Does your -- does your re -- the  
09:30:22 15 research group that you supervise conduct any  
16 research on the Byzantine generals problem?

17 A. No, they do not.

18 Q. How long has the Journal of Blockchain  
19 Research been published?

09:30:34 20 MR. WHITE: Objection to  
21 form.

22 You can answer if you  
23 understand.

24 A. Do you mean when was it founded? When  
09:30:49 25 was it started?

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09:30:50 1 Q. Yes, I do.

2 A. I'm not exactly sure, but I believe it  
3 is on the order of two to three years.

4 Q. It was founded two to three years ago?

09:31:01 5 A. I believe so, yes.

6 Q. Okay. Are you on the Journal of  
7 Blockchain Research's advisory board or its  
8 editorial board?

9 A. Advisory board.

09:31:10 10 Q. Okay. How long have you served in that  
11 capacity?

12 A. I'm not exactly sure. I'm going to have  
13 to think. COVID has sort of changed our -- warped  
14 our time. Since before COVID, so it must have  
09:31:39 15 been 2019.

16 Q. How were you selected to serve on the  
17 advisory board of that journal?

18 A. I was a participant in a mathematical  
19 conference on financial tech -- in a self-funded  
09:31:53 20 mathematical conference on financial technology  
21 that was held in Blockchain Triangle in University  
22 of North Carolina, I believe. And so some of the  
23 other members of that journal were present there  
24 and they asked, based on my presentation, whether  
09:32:13 25 I wanted to become a member of the advisory board.



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09:32:19 1 Q. In paragraph 11 of your report, you  
2 describe founding two start-up firms, is that  
3 right?

4 A. Yes.

09:32:31 5 Q. Do either of the firms that you founded  
6 employ blockchain technology?

7 A. They currently do not, but we're  
8 exploring it in one of them.

9 Q. For the one that you're exploring, are  
09:32:44 10 you exploring use of either XRP or the XRP Ledger?

11 A. No. This time not. No.

12 Q. In paragraph 8 of Exhibit 1, your  
13 opening report, you write that you are on --  
14 you're an advisory board member of two funds, is  
09:33:10 15 that right?

16 A. Yes, until 2017. Yes.

17 Q. I see. You're not currently a -- a  
18 member?

19 A. No longer, no.

09:33:18 20 Q. I see.  
21 When you were on the advisory board of  
22 those two funds, did you have any role in funding  
23 a company that had created its own blockchain?

24 A. Apologies. Which paragraph are you  
09:33:28 25 referring to?

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09:33:31 1 Q. Paragraph 8.

2 A. Could you repeat the question, please?

3 Q. Sure.

4 When you were on the boards of those  
09:33:38 5 funds in that capacity, did you have any role in  
6 funding a company that had created its own  
7 blockchain?

8 A. I'm on the advisory board of the funds  
9 and the funds -- I'm going to have to go back over  
09:33:54 10 which portfolio companies at that time were  
11 actually financed by the fund. So I'm not exactly  
12 clear on that question.

13 Q. You're not sure sitting here today?

14 A. I'm not sure sitting here today.

09:34:06 15 Q. Okay.

16 A. We have received many applications,  
17 including from blockchain companies, of companies  
18 that seek financing.

19 Q. Okay. When was bitcoin created?

09:34:23 20 A. Well, paper was published in 2008.

21 Q. When did you first learn of Ripple's  
22 existence?

23 A. I'm not exactly sure. It was around the  
24 time that I was serving -- during the period I was  
09:34:52 25 serving on the fund and -- on the funds and we

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09:34:57 1 received applications of blockchain companies and  
2 start looking for blockchain companies that were  
3 currently active in the market. I would say about  
4 maybe a decade ago. Between five years and a  
09:35:15 5 decade ago. Something like that.

6 Q. Was there any funding relationship  
7 between either of the funds on which -- strike  
8 that.

9 Was there any funding relationship  
09:35:24 10 between the Wolverine Venture Fund and Lurie  
11 Commercial -- Commercialization Fund and Ripple?

12 A. No.

13 Q. Okay. Do you own XRP?

14 A. I do not.

09:35:38 15 Q. Have you ever owned XRP?

16 A. No.

17 Q. Sitting here today, do you have any  
18 plans to acquire XRP?

19 A. No.

09:35:55 20 Q. Prior to your retention in this case,  
21 did you know anything about the SEC's case against  
22 Ripple?

23 A. I was aware through media, media  
24 disclosures and writeups and financial review and  
09:36:18 25 sort of articles like that. Forbes. So I knew

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09:36:22 1 about it, yes.

2 Q. Prior to your retention, had you ever  
3 discussed this case with any Ripple employee?

4 A. Can you repeat that question?

09:36:30 5 Q. Sure.

6 Prior to your retention as an expert  
7 witness in this case, had you ever discussed the  
8 SEC's case against Ripple with any Ripple  
9 employee?

09:36:37 10 A. No, I have not.

11 Q. Prior to your retention in this case,  
12 had you ever met any of the lawyers representing  
13 defendants in this case?

14 A. I have not.

09:36:47 15 Q. Okay. Are you charging defendants a fee  
16 for your expert services in this case?

17 A. Yes.

18 Q. How much is your fee?

19 A. It's 750 an hour for preparation of  
09:37:02 20 reports and 950 an hour for depositions.

21 Q. Is this your standard hourly fee for  
22 expert services?

23 A. Yes.

24 Q. How much have you billed for your  
09:37:12 25 services so far?

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09:37:22 1 A. I have to check the exact numbers, but I  
2 believe it's around 250,000.

3 Q. Have you received any of your  
4 compensation in XRP?

09:37:36 5 A. I have not.

6 Q. Do you have any plans to receive XRP as  
7 compensation for your expert services in this  
8 case?

9 A. No.

09:37:53 10 Q. Turning back to Exhibit 1, is Appendix B  
11 to your report a list of materials you considered  
12 in preparing your report in addition to those that  
13 are cited in the body of your report?

14 A. Yes, it is.

09:38:10 15 Q. Did you personally review each of the  
16 materials listed in Appendix B?

17 A. I did over the time of preparing for the  
18 case, yes.

19 Q. Did defense counsel provide you with all  
09:38:25 20 of the documents listed in Appendix B?

21 A. Not all the documents.

22 Q. Which were the documents that were --  
23 that you obtained other than from defense counsel?

24 A. I'm not exactly sure, but there were  
09:39:26 25 some documents that I pulled myself because they

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09:39:29 1 were publicly available after reading some of the  
2 reports, such as, for example, the Wells report.  
3 I looked at some of those footnotes and pulled  
4 those myself, but they're listed here as well.

09:39:42 5 Q. When you say "the Wells report," do you  
6 mean the "In Re: Ripple Labs Inc. Wells  
7 Submission on behalf of Ripple Labs Inc."?

8 A. I believe so.

9 Q. Which documents did you procure after  
09:40:09 10 reading Ripple's Wells submission?

11 A. I cannot be certain of that.

12 Q. Do you recall any sitting here today?

13 A. It was one of the litigation materials,  
14 but I do not recall.

09:40:27 15 Q. Okay. Turning to --

16 A. All that were requested by me from  
17 counsel.

18 Q. Okay. Turning to Appendix C, you  
19 received Appendix C, the list of XRP use cases,  
09:40:48 20 from defense counsel, is that right?

21 A. I requested this list from counsel after  
22 having seen reference to a comprehensive list of  
23 use cases in some of the filings, including the  
24 Wells filing, I believe. And I was aware of a  
09:41:09 25 number of cases myself. So then I, yes, did

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09:41:12 1 request from counsel whether they had this list  
2 available or a list available that I could take a  
3 look at.

4 Q. Okay.

09:41:23 5 A. And that's this list, Appendix C.

6 Q. That's Appendix C. Okay.

7 Did you make any changes to the XRP use  
8 cases list that you received from defense counsel  
9 before appending it to your report as Appendix C?

09:41:43 10 A. Is the question did I make changes to  
11 Appendix C before I appended it to the report?

12 Q. Close.

13 You received at your request a list of  
14 use cases from defense counsel.

09:41:54 15 A. Yes. Yes.

16 Q. After receiving that list but before  
17 appending it to your report, did you make any  
18 changes to the list?

19 A. I did not make changes to the list, no.

09:42:03 20 Q. Okay. What, if anything, did you do to  
21 confirm the accuracy of the information supplied  
22 on Appendix C?

23 A. This was part of my work and methodology  
24 listed in Appendix D. So I looked at the

09:42:20 25 websites. I looked at -- double-checked what

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09:42:28 1 industries these companies -- what does it say? --  
2 category, I guess, that these various different  
3 companies were assigned to. So I just did spot  
4 checks on those.

09:42:39 5 Q. Did you look at the websites for each of  
6 the entity names listed on Appendix C?

7 A. That was the work that I delegated to  
8 the student I referred to earlier.

9 Q. Okay. What work did the student that  
09:42:58 10 you referred to earlier do with respect to each of  
11 the entries on Appendix C?

12 A. Well, the student was really involved in  
13 the methodology to extracting from this list a  
14 subset that is my Appendix D. So as part of  
09:43:15 15 arriving at Appendix D, we had to actually do a  
16 review of appendix -- and an analysis of Appendix  
17 C.

18 Q. And what did that student's review and  
19 analysis entail?

09:43:27 20 A. So that goes to the methodology that I  
21 describe on page 64. So the student looked for  
22 each of these companies, first at which of these  
23 companies had received venture rounds. So we  
24 checked each of the companies as to the  
09:43:44 25 availability of information on each of these



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09:43:47 1 companies in Crunchbase. Crunchbase is a public  
2 database where one can search companies for  
3 financing, type of financing and who finances the  
4 company. We also get information there on  
09:44:03 5 founding date.

6 I used founding date in my methodology  
7 as a proxy for when venture investment was  
8 received by these companies relative to when XRP  
9 and XRPL technology was available.

09:44:22 10 So that's the kind of work that he did.  
11 Looked at the websites, looked at the founding  
12 dates, looked at the amount of the -- capital was  
13 received by these companies. And that's where I  
14 need to offer a correction on my page 64.

09:44:35 15 Q. How does the description of the  
16 methodology that you just explained differ, if at  
17 all, from your description on page 64?

18 A. So I want it to be clear. The  
19 methodology has not changed. It's the description  
09:44:53 20 of the methodology that is unclear. So --

21 Q. Can you explain to me what's unclear?

22 A. So -- yes. So the methodology  
23 essentially went through three steps. The first  
24 step was to go to Crunchbase and look for all the  
09:45:10 25 equity investment that each of the companies on

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09:45:12 1 the list of 660 had received and we used it as a  
2 proxy for high-growth companies among that list of  
3 660. And it's bullet number 1.

4 So bullet number 2 then, out of that  
09:45:27 5 full list, I looked at when these companies were  
6 founded, and that's what I state here, to see  
7 whether the companies were founded before or after  
8 Ripple was founded. But as you will see, my  
9 methodology, and the result of my methodology is

09:45:44 10 Appendix D, I included companies that were founded  
11 before Ripple was founded but actually received  
12 their equity capital after Ripple was founded, and  
13 that piece of information is not included in  
14 bullet number 2. So when I talk about the  
09:46:02 15 founding, to look at the before and after, it's  
16 really about the financing after the founding of  
17 Ripple.

18 And the third bullet is as is. It's  
19 really only bullet number 2 in Appendix 4.

09:46:18 20 And, just to be clear, the methodology  
21 is what the methodology is. It resulted in my  
22 Appendix D as a result of analysis of Appendix C.  
23 It's just that the description was not very clear.

24 Q. Okay. So the -- the piece of your  
09:46:40 25 methodology that in your view wasn't clearly

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09:46:42 1 described in your existing report, Exhibit 1, is  
2 that on some occasions you included companies  
3 within Appendix D that were founded prior to  
4 Ripple's founding?

09:46:54 5 A. Yes.

6 Q. Okay.

7 A. But received equity capital after  
8 Ripple's founding. And that is part of the title  
9 of Appendix D.

09:47:11 10 Q. Who prepared Appendix D?

11 A. I did together with my student.

12 Q. Other than your student, did anyone else  
13 assist you with preparing Appendix D?

14 A. No. I -- regarding Appendix D, I'd like  
09:47:36 15 to make a correction there as well --

16 Q. Sure. Go ahead.

17 A. -- in light of the correction on page  
18 64, paragraph 124. And the -- the title is really  
19 about use cases receiving venture capital after  
09:47:58 20 Ripple founding. So this "and founded" is not  
21 necessary in this title.

22 Q. And in some cases it's inaccurate?

23 MR. WHITE: Objection to  
24 form.

09:48:06 25 You can answer.

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09:48:10 1 A. It does not reflect the actual list of  
2 companies that I extracted from the larger  
3 database --

4 Q. Right.

09:48:16 5 A. -- which were founded before. So that's  
6 why "and founded" is incorrect.

7 Q. I see.

8 How many of the companies listed on  
9 Appendix D were founded before Ripple's founding?

09:48:35 10 A. I believe it was eight companies and  
11 these are all with the founding date, which is the  
12 last column in -- in this Appendix, in Appendix D.  
13 Last column is the founding date of those  
14 companies.

09:48:47 15 Q. I see.

16 A. So those that have founding dates before  
17 2012. About eight companies.

18 Q. What's the meaning of the number to the  
19 left of the date?

09:49:03 20 A. That's the aggregate equity capital that  
21 these companies have received.

22 Q. In millions?

23 A. In millions. Sorry. Yes.

24 Q. What, if anything, did you do to confirm  
09:49:14 25 the accuracy of the information in Appendix D?

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09:49:25 1 A. Appendix D was the result of my  
2 analysis. So it was all based on the information  
3 that was found on Crunchbase. However, I was  
4 notified later on in Mr. [REDACTED] report that one  
09:49:43 5 of the companies in here had -- we referred to the  
6 wrong website and, so, therefore there was  
7 confusion on the name.

8 So the correction to the list really  
9 came after taking a look at Mr. [REDACTED] report and  
09:50:02 10 when he referred to one company, namely STYRA  
11 Technologies. It's on page -- I guess these pages  
12 are not numbered. It's page 3 of Appendix D, sort  
13 of in the upper half. STYRA Technologies is not  
14 the correct company. It is not the correct  
09:50:22 15 website and that is not the correct equity capital  
16 to be used.

17 So this is -- this was an erroneous  
18 inclusion in that list.

19 Q. And prior to including STYRA in your  
09:50:35 20 Appendix D, did you visit STYRA's website as  
21 listed in Appendix D?

22 A. As I mentioned earlier, I worked with my  
23 student to look at these websites, yes.

24 Q. How many of the websites listed in  
09:50:47 25 Appendix D did you personally visit, if any?

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09:50:59 1 A. As I said, this was a back-and-forth  
2 between student and myself.

3 Q. Sitting here today, do you recall  
4 visiting any of the websites that are listed on  
09:51:07 5 Appendix D?

6 A. I did double-check after the STYRA issue  
7 was pointed out. Double-checked again all the  
8 websites of these companies.

9 Q. After you read Mr. [REDACTED] rebuttal  
09:51:20 10 report?

11 A. I double-checked at that time, yes.

12 Q. Prior to submitting the -- the report in  
13 the October of last year, which websites listed in  
14 Appendix D did you visit personally, if any?

09:51:34 15 A. I did them together with my student.

16 Q. Does that mean that you -- you sat with  
17 your student and looked at them together?

18 MR. WHITE: Objection; form.

19 You can answer.

09:51:47 20 A. We did not sit together. I asked him  
21 to -- after he did all the Crunchbase analysis,  
22 I -- I walked with him over the Crunchbase  
23 analysis and how to do this. And then he came  
24 back with a short list and then we started looking  
09:52:00 25 at -- we con -- we double-checked the websites and

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09:52:06 1 the information of that short list and --

2 Q. When you say "short list" -- sorry. Go  
3 ahead.

4 A. The short list being the 91 companies  
09:52:15 5 that resulted from the method -- from the  
6 methodology I applied to the 660.

7 Q. So the short list is now Appendix D?

8 A. Yes. Appendix D is the list of equity  
9 invested companies that have -- either founded  
09:52:28 10 after or before Ripple, that have received equity  
11 capital after the founding of Ripple.

12 Q. Okay. Setting apart anything --

13 A. Except for STYRA, of course.

14 Q. Thank you.

09:52:38 15 Setting apart anything that your student  
16 may have done, what did you do to review any of  
17 the websites that are listed on Appendix D?

18 A. I looked at the websites. Looked at  
19 when -- how they used XRP and XRPL or XRPL; what  
09:52:57 20 these companies did; what industry they were in;  
21 how they were categorized. So generally what kind  
22 of information was available on these companies.

23 I looked at media releases of these  
24 companies. I cross-referenced all these companies  
09:53:13 25 again with XRP and XRPL and see if there was any

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09:53:18 1 release that would either confirm or not confirm,  
2 but in this case it all confirmed the use, the use  
3 of XRP and XRPL.

4 Q. And you personally did that for all 91?

09:53:31 5 A. I personally did that for all 91.

6 Q. How did you locate media releases with  
7 respect to the XRP or the XRP Ledger for all 91?

8 A. There's sort of two parts to your  
9 question. How do you check media releases? Many  
09:53:47 10 of these companies actually have media buttons  
11 that I can check.

12 And as far as the cross --  
13 cross-referencing to XRP and XRPL, I did a search.

14 Q. A Google search?

09:54:02 15 A. A keyword search, yes.

16 Q. Okay.

17 A. And then looked at whatever business  
18 websites or other credible websites came up.

19 Q. Okay. Turning to --

09:54:14 20 A. CoinDesk and as such.

21 Q. I'm sorry? What was that?

22 A. It's a list of -- these are references  
23 such as Fortune and CoinDesk and crypto.com and,  
24 you know, professional sites that would have  
09:54:31 25 information on the use of XRP or XRPL by these



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09:54:34 1 companies.

2 Q. Turning to Appendix E, was Appendix E  
3 supplied by defense counsel?

4 A. Appendix E was requested by me. I was  
09:54:57 5 aware, since I had been aware and was familiar  
6 with Ripple or knew about Ripple, as I said, about  
7 between five and ten years ago. I knew what they  
8 were doing. I had seen media releases of this  
9 company.

09:55:19 10 I was able to, as part of my report,  
11 looking at equity investment in these companies  
12 and I at one point requested whether my  
13 knowledge -- I wanted to cross-reference whether  
14 my knowledge and what was available about the  
09:55:38 15 company was correct. So I requested this list and  
16 then this list was provided by counsel.

17 Q. After you received the list that appears  
18 at Appendix E to your report but before you  
19 appended it to your report, did you make any  
09:55:54 20 changes?

21 A. Can you repeat the question?

22 Q. Sure.

23 You received the materials that now  
24 appear as Appendix E from --

09:56:20 25 A. Mm-hmm.

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09:56:20 1 Q. -- defense counsel, correct?

2 A. Yes.

3 Q. Okay. Before you appended those  
4 materials as Appendix E to your report -- your  
09:56:26 5 report, did you make any changes?

6 MR. WHITE: Objection to  
7 form.

8 You can answer.

9 A. I don't think I did, no.

09:56:35 10 Q. What, if anything, did you do to confirm  
11 the accuracy of the information in Appendix E?

12 A. I -- so Appendix E has a lot of  
13 information. The subtitle of Appendix E is "Brief  
14 Timeline of Products, Fundraising Rounds, and  
09:56:54 15 Accolades." So the three elements of that.

16 Regarding everything that related to any  
17 of these three, I had other sources of information  
18 available as well, but in here I looked at all the  
19 websites or all these web links that were  
09:57:12 20 provided.

21 Q. And, again, you personally visited each  
22 of these websites?

23 A. I personally visited each of these  
24 websites.

09:57:28 25 Q. Did you take any other steps other than

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09:57:29 1 visiting these websites to confirm the accuracy of  
2 the information?

3 A. Yes. For example, fundraising rounds I  
4 requested from counsel that I could see the  
09:57:46 5 consolidated financial statements to  
6 cross-reference the amount of equity capital that  
7 was received, et cetera. Why it was received, any  
8 other information.

9 So I did a lot of cross-referencing  
09:58:01 10 between this and other sources of information  
11 available to me. I went just also to Ripple's  
12 site. I went to all the other media sites that  
13 are footnoted in the -- in the document to make  
14 sure that the information contained in here was  
09:58:19 15 correct.

16 And, again, the intent was not, as I  
17 stated in my report, where I take someone's  
18 information and put it in a few charts, Chart 6  
19 and Chart 7, to be illustrative of products and  
09:58:37 20 accolades. Not a full and complete list.

21 Q. Which years of Ripple's consolidated  
22 financial statements did you review?

23 A. I think we have to go back to materials  
24 provided in Appendix B. I believe the first  
09:59:13 25 Bates-identified documents are the consolidated

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09:59:17 1 statements, but also -- let me refer to my report,  
2 the table where I aggregate this information.  
3 There's a footnote in the report that I also want  
4 to refer to so...

09:59:46 5 Yeah. Table 3 on page 50 has the  
6 footnote to -- to the links in Appendix E, I  
7 guess. Appendix -- yeah, in Appendix E, and the  
8 data came from the consolidated statements which I  
9 think are all the Bates-numbered documents.

10:00:11 10 Q. I see.

11 A. So I seen every year, I believe. Yep.  
12 2014, '15, '16, '17, through -- through 2020.

13 Q. Did you review the entirety of the  
14 financial statements for the years listed in

10:00:26 15 Footnote 77?

16 A. I did, yes.

17 Q. Okay. Other than the materials that  
18 we've already discussed in the appendices, did  
19 defense counsel supply you with any other facts or  
10:00:37 20 data that appears in your report?

21 A. Other than the footnotes and Appendix B,  
22 no.

23 Q. When you say "other than the footnotes,"  
24 do you mean that defense counsel supplied you with  
10:00:51 25 the citations that appear in the footnotes in your

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10:00:54 1 report?

2 MR. WHITE: Objection.

3 Calls --

4 A. Can you restate that question?

10:00:57 5 Q. Sure.

6 Can you identify me -- for me what facts  
7 or data defense counsel supplied that we haven't  
8 yet discussed today?

9 A. No, these were all mine.

10:01:08 10 Q. So to be clear, other than the  
11 appendices that we've discussed --

12 A. Mm-hmm.

13 Q. -- there's nothing else in your report  
14 in terms of facts or data that was supplied by  
10:01:18 15 defense counsel?

16 A. No.

17 Q. In your report you cite press releases  
18 by Ripple on occasion, correct?

19 A. In the report?

10:01:38 20 Q. Yes.

21 A. Yes. Where in the report are you  
22 referring?

23 Q. I don't have a citation for you at the  
24 ready.

10:01:48 25 Do you recall sitting here today whether

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10:01:49 1 or not you cited Ripple press releases in the  
2 report?

3 A. I do, yes.

4 Q. Okay. And did you?

10:02:00 5 A. Yes. Yes, I did. I'm sorry. Yes.

6 Q. And on occasion you referred to Ripple's  
7 website as a source for your report, is that  
8 correct?

9 A. Yes, I did.

10:02:11 10 Q. Okay. For any of these Ripple sources,  
11 what, if anything, did you do to confirm the  
12 accuracy of the information supplied in those  
13 sources?

14 MR. WHITE: Objection.

10:02:27 15 A. Is your question specific to the Ripple  
16 website?

17 Q. Specific to Ripple website or Ripple  
18 press releases or any other Ripple-authored  
19 source.

10:02:39 20 MR. WHITE: Same objection.

21 A. So I've been familiar with Ripple for a  
22 long time and I'm also -- through the University  
23 of Michigan we're a member of UBRI, Ripple's  
24 University Blockchain Research Initiative, that  
10:02:57 25 results in meetings. There was one in-person

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10:03:00 1 meeting in Berkeley, UC Berkeley, and there have  
2 been two online meetings. And so there's a lot of  
3 information that comes out there that jives with  
4 the information that is released on the website.

10:03:14 5 So it becomes sort of a cross-referencing between  
6 multiple sources.

7 Q. Okay. Other than what you just  
8 mentioned, did you take any affirmative steps to  
9 confirm the accuracy of information authored by  
10:03:26 10 Ripple that's cited in your report?

11 MR. WHITE: Objection; form.

12 A. Depends on which specific information  
13 and reference you're referring to.

14 Q. Sitting here today, can you recall any  
10:03:43 15 steps you took to confirm the accuracy of any  
16 particular Ripple source cited in your report?

17 MR. WHITE: Objection; form.

18 A. Any Ripple source?

19 Q. Yes.

10:03:57 20 A. I cannot answer that question. Some I  
21 did; some I did not further verify. There's many  
22 pages on the websites. There's many documents  
23 related to XRP and XRPL. There's many other  
24 crypto sites that refer to it. And in some cases  
10:04:19 25 I did cross-reference. We have to go to a

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10:04:21 1 specific citation or footnote.

2 Q. Okay. Did you talk to any Ripple  
3 employees in connection with the preparation of  
4 your report?

10:04:27 5 A. No.

6 Q. Okay. Was there ever any occasion where  
7 you copied language from a Ripple source directly  
8 into your expert report?

9 A. What do you mean with "a Ripple source"?

10:04:45 10 Q. For instance, there's a -- say there's a  
11 Ripple press release.

12 Did you ever copy language directly from  
13 that press release into your report?

14 A. If and when I did, it would have been in  
10:04:52 15 quotations.

16 Q. Okay. Setting aside Ripple sources, did  
17 you ever copy language from any other source  
18 directly into your report without quotations?

19 MR. WHITE: Objection to

10:05:00 20 form.

21 A. Not that I'm aware of, no.

22 Q. Okay. In preparing your opinion that's  
23 set forth in Exhibit 1, did you consider any  
24 sources that aren't cited in Exhibit 1?

10:05:24 25 A. Could you repeat that question?



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10:05:25 1 Q. Sure.

2 In preparing your expert opinion that's  
3 set forth in Exhibit 1, did you consider any  
4 sources that are not cited in Exhibit 1?

10:05:41 5 A. No.

6 Q. Okay.

7 A. Besides my overall knowledge in the  
8 space and that helped me structure the report, but  
9 I cited to any statement that was relevant in this  
10 report.

10:05:53 11 Q. Okay. I'll just ask a narrowing  
12 opinion.

13 In preparing your opinion set forth in  
14 Exhibit 1, did you consider any websites where you  
15 didn't cite the website in Exhibit 1?

10:06:02 16 A. I did not.

17 Q. Okay. Moving to Exhibit 2, your  
18 rebuttal report, in preparing your opinions set  
19 forth in Exhibit 2, did you consider any materials  
20 that are not listed within Exhibit 2?

10:06:12 21 A. I only see the footnotes here. Are  
22 there any other...?

23 Q. Right.

24 Were there any other sources that you  
10:06:33 25 considered in preparing Exhibit 2 that are not

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10:06:36 1 cited in any way in Exhibit 2?

2 A. No.

3 Q. No.

4 You cite a number of academic articles

10:06:46 5 in Exhibit 2?

6 MR. WHITE: Objection. Is

7 there a question?

8 A. Can you repeat the question?

9 Q. Sure.

10:06:55 10 You -- did you cite a number of academic  
11 articles in Exhibit 2?

12 A. I do.

13 Q. Okay. Did defense counsel supply you  
14 with any of the academic articles that you cite in  
10:07:04 15 Exhibit 2?

16 MR. WHITE: You can answer

17 that yes or no.

18 A. No.

19 Q. Okay. Other than your own reports, have  
10:07:12 20 you read any other expert reports in this case?

21 A. Yes.

22 Q. Which ones?

23 A. I have read Dr. [REDACTED] report and  
24 then the rebuttal reports inasmuch as they cover  
10:07:30 25 your question.

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10:07:31 1 Q. Have you read all of the rebuttal  
2 reports from the SEC?

3 MR. WHITE: Objection.

4 A. I have read the rebuttal report from  
10:07:40 5 Mr. [REDACTED] that is relevant to my original report.

6 Q. Did you read Mr. [REDACTED] opening report?

7 A. I did not.

8 Q. Okay. Did you read the entirety of  
9 Mr. [REDACTED] rebuttal report?

10:07:55 10 A. I did.

11 Q. Are there any other expert reports that  
12 you read that we haven't discussed yet?

13 A. There was an updated report by  
14 Dr. [REDACTED] that I also read.

10:08:13 15 Q. Have you also reviewed Dr. [REDACTED]  
16 deposition testimony in this case?

17 A. I have not.

18 Q. Other than the deposition testimony  
19 that's listed in Appendix B to your Exhibit 1,  
10:08:28 20 have you reviewed any other deposition testimony  
21 in this case?

22 A. Sorry. I have to go and refer.

23 Q. Sure.

24 A. No, just David Schwartz and Asheesh  
10:09:01 25 Birla.

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10:09:03 1 Q. Okay. Going back to Exhibit 2 for a  
2 moment, did you read all of the academic papers  
3 that you cited in Exhibit 2?

4 A. Exhibit -- what do you refer -- what is  
10:09:18 5 Exhibit 2?

6 Q. Your rebuttal report is Exhibit 2.

7 A. Ah, yes. Okay.

8 Q. So the question is: Did you read all of  
9 the academic papers that you cited in your  
10:09:25 10 rebuttal report?

11 A. I did.

12 Q. Let's see. Let's turn back to Exhibit  
13 1, paragraph 41, and Footnote 26.

14 Are you there, Professor?

10:09:53 15 A. Page 41?

16 Q. Paragraph 41.

17 A. Oh, paragraph 41.

18 Q. Page 19.

19 A. And you're referring to?

10:10:09 20 Q. Footnote 26.

21 A. Yes.

22 Q. In Footnote 26, you cite a number of  
23 items on which you rely in addition to the sources  
24 cited in your report, is that correct?

10:10:18 25 MR. WHITE: Objection.

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10:10:24 1 A. These are cited in my report.

2 Q. Right. Let me just read it. Footnote  
3 26 states "In describing the XRP Ledger, XRP, and  
4 Ripple throughout this report, in addition to the  
10:10:34 5 cited sources, I am relying on..." and then the  
6 sentence continues, correct?

7 A. Oh, yes.

8 Q. Okay. What of your "personal dealings  
9 with Ripple in connection with UBRI and developing  
10:10:44 10 the gift to the University of Michigan" did you --

11 THE REPORTER: Repeat.

12 MR. SYLVESTER: Sure.

13 Q. What of your "personal dealings with  
14 Ripple in connection with UBRI and developing the  
10:10:57 15 gift to the University of Michigan" did you rely  
16 on in forming the opinions set forth in your  
17 report?

18 A. Specific which knowledge?

19 Q. Yeah.

10:11:10 20 How did it inform your report?

21 MR. WHITE: Objection.

22 A. Well, I'm broadly familiar with the  
23 company. I'm familiar with its arc of products  
24 over time. I'm familiar with the application use  
10:11:27 25 cases even before we started doing this report

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10:11:30 1 that used XRP -- some use cases that used XRP or  
2 XRPL.

3 I'm familiar with Xpring and RippleX,  
4 again, through my engagements on UBRI.

10:11:50 5 I'm familiar with, of course,  
6 conversations that I had with other UBRI members  
7 from the 27 global universities that come together  
8 at these conferences. So that sort of generally  
9 informs the broad understanding of -- of -- of  
10:12:12 10 technology, technology limitations, uses, business  
11 models.

12 And then, of course, I cite specifically  
13 to a case, a business case, Ripple -- the business  
14 of crypto, which is one of the business cases that  
10:12:30 15 I use in an entrepreneurial business development  
16 course that I teach at the University of Michigan  
17 to engineers and MBAs.

18 Q. What use cases for XRP or the XRP Ledger  
19 were you familiar with prior to your engagement  
10:12:44 20 with this case?

21 A. Are you asking for the names of the  
22 companies?

23 Q. Whatever you would consider to be a use  
24 case.

10:13:00 25 MR. WHITE: Objection. No

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10:13:02 1 question.

2 A. So I was familiar with Ripple Net and  
3 xCurrent and the xRapid, ODL, even though it all  
4 went through iterations. I was familiar with, of  
10:13:23 5 course, the exchanges, decentralized exchanges as  
6 well as other exchanges that use XRP.

7 I am --

8 Q. Can you give me an example of  
9 decentralized and other exchanges that use XRP?

10:13:42 10 A. Both buyers and sellers of XRP on  
11 exchanges. On a -- not a specific exchange, but  
12 Binance and others, Kraken and those.

13 Q. Okay. Turning back to Footnote 26, one  
14 of the other items on which you relied in your  
10:14:04 15 expert report is your experience as an expert in  
16 blockchain technology, is that correct?

17 A. Yes.

18 Q. How did your experience as an expert in  
19 blockchain technology inform your report?

10:14:22 20 A. Well, my expertise is mainly focused  
21 around different application domains, the  
22 disruptive potential of blockchain, blockchain  
23 business -- the blockchain business case, business  
24 cases. How different kinds of companies have  
10:14:40 25 deployed blockchain, not just start-ups, but also

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10:14:45 1 larger corporations such as IBM and others. How  
2 they use blockchains as really more from on the  
3 applied side rather than on the underlying  
4 technical features side specifically.

10:15:04 5 So that sort of broad information is how  
6 disruptive the technology is in the market. And  
7 with "disruptive," I mean how disruptive the  
8 future opportunities for growth are for blockchain  
9 in the industry.

10:15:24 10 Q. Another item on which you relied  
11 according to Footnote 26 is Ripple's Wells  
12 submission.

13 Do you see that?

14 A. Yes.

10:15:32 15 Q. Do you have an understanding of what a  
16 Wells submission is, what its purpose is?

17 A. I do not.

18 Q. Okay. What portion of Ripple's Wells  
19 submission did you rely on in preparing your  
10:15:47 20 report?

21 A. I read the entire submission to get a  
22 sense of context, to get a sense of arguments, to  
23 get a sense of kind of information that is  
24 being -- that was in the early days of my  
10:16:01 25 engagement in this case where I wanted to



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10:16:05 1 basically look at all types of reports that were  
2 out there, filings, as well as depositions, to  
3 inform myself as to what the context and various  
4 different arguments were related to this case.

10:16:26 5 Q. When you say you wanted to get a sense  
6 of the arguments related to this case, arguments  
7 about what?

8 A. Well, I don't mean the -- the legal  
9 arguments. I just want to see what are the  
10:16:38 10 different positions, I guess, that -- that these  
11 different reports, you know, display.

12 Q. The position of Ripple?

13 MR. WHITE: Objection. No  
14 question.

10:16:54 15 A. The position of whomever the author was  
16 of -- and authors were of the report.

17 Q. Do you know who authored Ripple's Wells  
18 submission?

19 A. As I sit here, I cannot be sure, but I  
10:17:12 20 believe it was on behalf of Ripple. I just --  
21 that was immaterial to my review. My review was  
22 what is the information that is out there relating  
23 to this SEC case? Because all I knew at that time  
24 was essentially all the media disclosures. So  
10:17:29 25 very high level. I didn't know anything else

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10:17:33 1 related to -- of course related to the specific  
2 case. I wanted to read more about it.

3 Q. Did you do anything to verify the  
4 accuracy of any information you learned from  
10:17:42 5 reviewing Ripple's Wells submission?

6 A. I did not. I read it, again, to gain  
7 insights.

8 Q. You mentioned earlier -- turning again  
9 to Footnote 26, you mentioned earlier the business  
10:18:10 10 case that you teach in your class.

11 Is that Ripple, the business of crypto?

12 A. Yes, it is.

13 Q. Okay. What information did you draw  
14 from Ripple, the business of crypto, in forming  
10:18:22 15 your opinions?

16 A. Well, this is one of a few FinTech or  
17 financial technology cases that is available on --  
18 in the Harvard Business School site, cases that I  
19 use in my classes, that really talks about and --  
10:18:40 20 and explains to the students sort of how digital  
21 companies and early technology companies develop  
22 their product strategy, their market strategy,  
23 their market adoption. It's really more from that  
24 perspective.

10:18:54 25 So I wanted to understand what was the

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10:18:57 1 value proposition that -- I wanted to understand.  
2 I mean I teach what's the value proposition that  
3 Ripple put out there and how -- sort of what is  
4 the arc of different products that result in sort  
10:19:12 5 of moving towards that market.

6 Q. Do you know whether anyone at Ripple  
7 contributed content to that business case?

8 A. I will have to check the business case,  
9 but I would not be surprised, given my knowledge  
10:19:33 10 of how business cases are written, that there  
11 would be interviews with people from Ripple.

12 Q. Do you know whether anyone at Ripple  
13 approved the statements in the business case?

14 A. I do not know what -- as I'm sitting  
10:19:52 15 here now.

16 Q. Okay. Would that sort of review and  
17 approval by a company that was the subject of a  
18 business case be standard operating procedure?

19 MR. WHITE: Objection; form  
10:20:06 20 and foundation.

21 A. I'm not sure what the Harvard Business  
22 School's rules are regarding the degree of  
23 affirmation or confirmation or sign-off.

24 Q. Did you ever learn -- go ahead. Sorry.

10:20:23 25 A. So the case is exemplary of many other

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10:20:27 1 digital finance cases that I teach in that class  
2 and they all follow that same arc in business  
3 development iterations and product iterations over  
4 time. So as the students become more interested  
10:20:38 5 in financial technology and blockchain, I wanted  
6 to bring in financial technology cases to sort of  
7 illustrate that this is generally how digital  
8 industries develop.

9 Q. Did you at any point ever learn that any  
10:20:53 10 of the information included within that case study  
11 was inaccurate?

12 MR. WHITE: Objection; form.

13 A. Sorry. Could you repeat that question,  
14 please?

10:21:12 15 Q. Sure.

16 Have you ever learned that any of the  
17 information included within the case study  
18 referenced in Footnote 26 was inaccurate?

19 MR. WHITE: Objection; form.

10:21:30 20 A. So did I verify that or did I learn  
21 about it? So what was your question?

22 Q. The latter.

23 Just have you ever discovered or learned  
24 at any point in time that there's any information  
10:21:42 25 that's within that case study that turned out to

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10:21:44 1 be inaccurate?

2 MR. WHITE: Objection; form.

3 A. The only thing I can speak to is that  
4 they highlight the MoneyGram collaboration,  
10:21:52 5 partnership in the business case --

6 Q. Mm-hmm.

7 A. -- as written up. And I learned after  
8 that the MoneyGram partnership I believe was  
9 either on hiatus or discontinued. I'm not sure  
10:22:07 10 exactly what was -- what was happening there. But  
11 that wouldn't make it inaccurate. It's just that  
12 one partner that adopted the product may have made  
13 a decision as to whether or not they liked it or  
14 didn't like it.

10:22:21 15 This is, again, part of the overall  
16 adoption process. You test out the market. So I  
17 don't think the question is about accurate or  
18 inaccurate necessarily. It's about does the -- do  
19 the conditions change?

10:22:43 20 Q. Right. But just setting aside changed  
21 market conditions --

22 A. Mm-hmm.

23 Q. -- is there anything else in the report  
24 that sitting here today you think is inaccurate?

10:22:53 25 A. I would have to go back over that report

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10:22:55 1 in the context of what I know now since being  
2 engaged whether or not anything that I read in  
3 that case I would deem to be inaccurate. I don't  
4 know.

10:23:16 5 Q. Turning back to Exhibit 2, paragraph 2,  
6 it says that you've been asked to evaluate the  
7 methodology and conclusions set forth in that  
8 report, referencing Dr. [REDACTED] report, is that  
9 right?

10:23:34 10 A. Yes, that's what it states in this  
11 paragraph.

12 Q. Okay. Are you rebutting any expert's  
13 opinion in this case other than Dr. [REDACTED]  
14 opinion?

10:23:46 15 A. My focus was on Dr. [REDACTED] report.

16 Q. Regardless of your focus, is there any  
17 other expert opinion that you're rebutting in this  
18 case other than Dr. [REDACTED] opinion?

19 A. No.

10:24:02 20 Q. Okay. Do you know Dr. [REDACTED]

21 A. Personally? No, I do not.

22 Q. Prior to this case, had you ever heard  
23 of him?

24 A. I had not.

10:24:17 25 Q. Prior to your retention in this case,

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10:24:19 1 did you have any familiarity with his work?

2 A. Prior to retention in this case?

3 Q. Mm-hmm.

4 A. No.

10:24:30 5 Q. Okay. Did you review the portions of  
6 Dr. [REDACTED] report that set forth his  
7 qualifications in his CV?

8 A. Yes, I did.

9 Q. Do you believe that Dr. [REDACTED] is  
10:24:39 10 qualified to offer an expert opinion on the topic  
11 of decentralization?

12 MR. WHITE: Objection; form  
13 and calls for a legal conclusion.

14 A. When you refer to the "topic," what do  
10:24:52 15 you mean specifically?

16 Q. Well, in Dr. [REDACTED] report, he sets  
17 forth his opinion on the decentralization of the  
18 XRP Ledger, correct?

19 A. Yes.

10:25:04 20 MR. WHITE: Objection; form.

21 Q. And he also in his report compares the  
22 decentralization of the XRP Ledger with the  
23 bitcoin and Ethereum ledgers, correct?

24 THE REPORTER: Slow down,  
10:25:11 25 please. "He also in is report..."?

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10:25:12 1 Q. Compares the decentralization of the XRP  
2 Ledger with the bitcoin and Ethereum ledgers,  
3 correct?

4 MR. WHITE: Objection; form.

10:25:21 5 A. That is what his opinion -- his opinion  
6 is based on that compare -- his methodology is --  
7 he uses a methodology to make that comparison,  
8 yes.

9 Q. And in so doing, he's offering an  
10:25:34 10 opinion broadly on the topic of decentralization,  
11 correct?

12 MR. WHITE: Objection; form.

13 A. He is offering an opinion on that,  
14 that's correct.

10:25:41 15 Q. Okay. So based on your review of  
16 Dr. [REDACTED] qualifications and his CV, do you  
17 believe that he's qualified to offer an opinion on  
18 the topic of decentralization?

19 MR. WHITE: Objection; form,  
10:25:53 20 calls for a legal conclusion.

21 Q. You can answer.

22 A. He is qualified. I agree he is  
23 qualified to form an opinion. The question is  
24 whether the approach and the methodology that he  
10:26:07 25 uses is one that is established in the literature.



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10:26:16 1 Q. Prior to your retention as an expert  
2 witness in this case, had you ever met anyone who  
3 worked at Ripple?

4 A. Prior to my retention? Yes.

10:26:25 5 Q. Who?

6 A. Asheesh Birla.

7 Q. Anyone else?

8 A. And then Lauren Weymouth.

9 Q. Anyone else?

10:26:44 10 MR. WHITE: Objection; form.

11 A. There are people that speak at these  
12 UBRI conferences and I meet them from far away,  
13 but I don't really have a one-on-one conversation  
14 with them.

10:27:00 15 Q. Who falls within that category?

16 A. Example, David Schwartz and Chris  
17 Larsen. He opens the conference. He opened one  
18 of the conferences.

19 Q. How about Mr. Garlinghouse?

10:27:21 20 MR. WHITE: Objection; form.

21 A. I don't know him.

22 Q. Have you ever heard him speak?

23 A. No.

24 Q. And you've never had a one-on-one  
10:27:42 25 conversation with either Mr. Schwartz or

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10:27:46 1 Mr. Larsen?

2 MR. WHITE: Objection; form.

3 A. I have not.

4 Q. Okay. When did you meet Mr. Birla?

10:27:58 5 Approximately is fine.

6 A. I believe that must have been 2018  
7 sometime.

8 Q. How did you meet him?

9 A. He was -- I was introduced to him  
10:28:13 10 through the Business Engagement Office of the  
11 University of Michigan. Companies such as Ripple  
12 that have alumni of the University of Michigan  
13 will reach out to the Business Engagement Office  
14 to set up partnerships or gift agreements or  
10:28:31 15 things like that.

16 And through the initial context that  
17 Mr. Birla made with the Business Engagement  
18 Office, I received a call to say that Ripple was  
19 interested in finding out what the University of  
10:28:45 20 Michigan was doing with respect to blockchain and  
21 cryptocurrencies and that resulted in a first --  
22 first a call and then a meeting at one of the --  
23 during one of the football games, I believe.

24 Q. Why did the Business Engagement Office  
10:29:07 25 of the University of Michigan reach out to you?

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10:29:10 1 MR. WHITE: Objection;  
2 foundation.

3 A. I had at that time -- so this was --  
4 we're talking 2018. In 2016, '16/'17, I started  
10:29:25 5 the Center for Infrastructure Finance at the  
6 University of Michigan. And some of the people at  
7 the Business Engagement Office that I know knew  
8 that I was interested in decentralized  
9 technologies and blockchain as part of that  
10:29:37 10 center. So they reached out to several people  
11 across the university.

12 MR. WHITE: Ms. Sylvester,  
13 sorry, we've been going for about an  
14 hour and twenty. Would now be a good  
10:29:52 15 time for a break?

16 MR. SYLVESTER: Sure. Fine  
17 by me.

18 MR. WHITE: Okay.

19 THE VIDEOGRAPHER: We'll go  
10:29:56 20 off the record. The time is 10:31.

21 (Whereupon, a recess is  
22 taken.)

23 THE VIDEOGRAPHER: We'll go  
24 back on the record. The time is  
10:47:33 25 10:48.

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10:47:35 1 BY MR. SYLVESTER:

2 Q. Professor, when was the last time that  
3 you spoke with Mr. Birla?

4 A. I don't recall exactly. Since  
10:47:50 5 Ms. Weymouth took over from him in her role as  
6 director of UBRI. I believe I refer to that in my  
7 expert report, when she took over. She took over  
8 in August 2018.

9 Q. And what is her role at UBRI?

10:48:14 10 A. She is the Director of University  
11 Partnerships.

12 Q. And what's the nature of your  
13 communications with her in that role?

14 A. She will -- she will contact all the  
10:48:45 15 UBRI leads on occasion and then it's usually about  
16 an update on their software or an invitation to  
17 participate in meetings or in hackathons or things  
18 like -- things of the like.

19 Q. What exactly is UBRI?

10:49:10 20 A. UBRI is a name, University Research  
21 Partnership, that is intended to -- intended to  
22 sort of expand the knowledge in blockchains and  
23 financial technology and to prepare the next  
24 generation of, sort of, employees in the FinTech  
10:49:35 25 space at various different universities.

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10:49:39 1           So it really is a gifting program to  
2 stimulate innovation -- sorry, to stimulate  
3 innovation at universities.

4           Q.    UBRI is a gifting program, is that  
10:49:51 5 right?

6                           MR. WHITE:  Objection; form.

7           A.    It is a partnership program and the way  
8 they work with universities is through gifts.

9           Q.    UBRI gives gifts to universities.

10:50:01 10                           MR. WHITE:  Objection.  No  
11 question.

12           A.    That I'm going to have to double-check  
13 how the gift arrangement, as in the legal gift  
14 arrangement, is structured, which I do not get  
10:50:14 15 involved in.  But it is a -- it is designated as  
16 being a gift under a corporate gifting of the  
17 university.  So, therefore, it's not a contract.

18           Q.    When you said "the gift" in your answer,  
19 do you mean the gift given to the University of  
10:50:33 20 Michigan?

21           A.    Yes.

22           Q.    Okay.  And Ripple funds UBRI, is that  
23 right?

24           A.    Actually, I am not privy to that  
10:50:47 25 information, on how UBRI is funded.

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10:50:51 1 Q. Okay. Can you look --

2 A. But it being a partnership program --

3 MR. WHITE: Let the witness  
4 finish his answer -- sorry, finish his  
10:50:55 5 answer.

6 MR. SYLVESTER: Please do.

7 A. No, that's okay.

8 I don't know how it is funded.

9 Q. Okay. Can we look at paragraph 12 of  
10:51:02 10 your report?

11 A. Yes.

12 Q. So the first sentence says "Ripple Labs  
13 Inc. (Ripple) funds what is known as the  
14 University Blockchain Research Initiative (UBRI)"?

10:51:21 15 A. Yes.

16 Q. What's the basis for that statement?

17 A. When I say it funds it, it's actually  
18 operated out of Ripple. It's part of Ripple, but  
19 I -- it does not refer to the actual sourcing of  
10:51:36 20 the funding, which I do not know and I'm not  
21 familiar with.

22 Q. Why did you choose the word "funds"?

23 A. I mainly did it based on assumption  
24 because it's part of Ripple and, therefore, I  
10:51:55 25 would assume it is Ripple-backed.

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10:51:59 1 Q. Sitting here today, do you know whether  
2 or not it's Ripple-backed?

3 MR. WHITE: Objection to  
4 form.

10:52:08 5 A. As I answered earlier, I am not familiar  
6 with the actual agreements between Ripple and  
7 UBRI, the UBRI program.

8 Q. What was your --

9 A. The corp -- corporate agreements, that  
10:52:20 10 is.

11 Q. Sure.

12 What was your involvement with the  
13 University of Michigan's participation in UBRI, if  
14 any?

10:52:35 15 A. I am one of the three university leads  
16 to operationalize the gift.

17 Was that your question?

18 Q. Can you explain what you mean by  
19 "operationalize the gift"?

10:52:53 20 A. Yeah. So when a -- a corporate funder  
21 engages with the university, the university,  
22 through its Business Engagement Office, will reach  
23 out to who they think are relevant faculty  
24 members/professors at the university and they  
10:53:10 25 identified three key members. Over time. This

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10:53:13 1 was iterative. One in engineering, that is  
2 myself. Then a person in the business -- the Ross  
3 School of Business and a person in the Ford School  
4 for Public Policy.

10:53:26 5 And they then leave it up to the three  
6 of us to develop a program that would meet the  
7 spirit of the gift, but we do not have any  
8 contractual obligations to -- Ripple cannot  
9 interfere in what it is that we actually do with  
10:53:46 10 the funding once it releases UBRI and comes to the  
11 university.

12 Q. And, Professor, we've been speaking of  
13 "the gift."

14 Is this the gift referenced in paragraph  
10:53:56 15 13 of your expert report?

16 A. Yes, it is.

17 Q. Okay. You're the director of the Center  
18 for Smart Infrastructure Finance?

19 A. That's correct, yes.

10:54:08 20 Q. And that center co-founded the  
21 University of Michigan FinTech Collaboratory?

22 MR. WHITE: Objection. No --  
23 no question.

24 Q. Go ahead.

10:54:18 25 A. Okay. Yes, the center is one of the



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10:54:25 1 three co-founders of the FinTech Collaboratory.

2 Q. And according to paragraph 12, the  
3 FinTech Collaboratory -- strike that.

4 According to paragraph 12, the FinTech  
10:54:37 5 Collaboratory is funded in part by a gift from  
6 UBRI, is that right?

7 A. Yes. Which statement are you referring  
8 to?

9 Q. Paragraph 12, the third sentence.

10:54:49 10 A. Yes. Yes.

11 Q. Okay. What portion of the FinTech  
12 Collaboratory's budget is -- constitutes that gift  
13 from UBRI?

14 MR. WHITE: Objection; form.

10:55:02 15 A. So the FinTech Collaboratory isn't  
16 really an entity. It's an integration of three  
17 centers. And these -- the Ripple gift comes in to  
18 these three centers, each of whom have plenty of  
19 other funding from other sources.

10:55:20 20 Q. Okay. Does -- does the FinTech  
21 Collaboratory have a budget?

22 A. That would be the Ripple gift.

23 Q. The Ripple gift is the FinTech  
24 Collaboratory's budget?

10:55:36 25 A. That then trickles down into the three

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10:55:38 1 partners: In engineering, in the business school,  
2 and in Ford School for Public Policy. And these  
3 three partners actually have to find -- or  
4 actually are funded otherwise as well. So

10:55:48 5 basically it's part of the funding of the three  
6 core members of the FinTech Collaboratory.

7 Q. And who are the three core members of  
8 the FinTech Collaboratory?

9 A. So it is the Center for Infrastructure  
10:55:59 10 Finance; it is the Ford School for Public Policy  
11 Center on Finance, Law, and Policy; and it is the  
12 FinTech Initiative at the Ross School of Business.

13 Q. Have you seen the original gift  
14 agreement referenced in paragraph 13?

10:56:19 15 A. I have seen it, yes.

16 Q. Do you have it?

17 MR. WHITE: Objection to  
18 form.

19 Q. Is it within your files?

10:56:33 20 A. It's probably somewhere on my computer.

21 Q. Did you review that in connection with  
22 preparing your report?

23 A. No.

24 Q. Was there a second gift agreement for  
10:56:57 25 the gift extended in April of 2021 as referenced

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10:57:01 1 in paragraph 13?

2 A. Yes.

3 Q. And do you have access to that gift  
4 agreement as well?

10:57:15 5 MR. WHITE: Objection; form.

6 A. I have access to the check.

7 Q. Are the funds from the gift extension  
8 referenced in paragraph 13 allocated in the same  
9 way as the initial gift?

10:57:36 10 MR. WHITE: Objection; form.

11 A. No. So it depends on the needs and the  
12 needs of the individual partners of the center.

13 Q. How is -- sorry. Go ahead.

14 MR. WHITE: Please finish

10:57:48 15 your answer.

16 A. It depends on the needs, the  
17 programmatic needs, I guess, of the different  
18 members of the Collaboratory.

19 Q. The gift extension that started in April  
10:58:00 20 of 2021 is ongoing for two years from April 2021?  
21 Am I reading that correctly?

22 A. Yes, but I am not sure when the gift was  
23 actually committed to the university. It was sort  
24 of -- there was an agreement and then there was a  
10:58:22 25 commitment of the gift as in when it's actually

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10:58:26 1 coming to the university. So I don't know when  
2 it's coming to the -- or when -- when it came to  
3 the university.

4 Q. Do you know how the funds as part of the  
10:58:36 5 gift extension have been allocated to date?

6 A. To date? I would have to take a look.

7 Q. Have part of -- strike that.

8 Has any part of the gift extension been  
9 allocated to the FinTech Collaboratory?

10:58:56 10 A. It all went to the FinTech  
11 Collaboratory, but the allocation as to the three  
12 parties of the FinTech Collaboratory changes. And  
13 from my recollection, the gift extension was  
14 mainly allocated to the business school and the  
10:59:14 15 School for Public Policy.

16 Q. As -- as part of your role at the  
17 University of Michigan, do you conduct research?

18 A. Yes. I lead a research group, yes.

19 Q. And is any of that research group's  
10:59:39 20 funding funded by the UBRI gifts we've been  
21 discussing?

22 A. Some of it.

23 Q. What percentage?

24 A. When you refer to "percentage," do you  
10:59:57 25 refer to the percentage of the center's budget,

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11:00:00 1 how much of that is Ripple, how much of that is  
2 UBRI funds?

3 Q. I'm focusing just on the research group  
4 that you supervised.

11:00:09 5 A. Okay.

6 Q. How much of that research group's  
7 funding comes from the UBRI gifts we've been  
8 discussing?

9 A. Maybe about 10 or 15 percent.

11:00:22 10 Q. Has there been any change or update to  
11 Ripple's gift to the University of Michigan since  
12 you submitted your report in October of 2021?

13 MR. WHITE: Objection; form.

14 A. Can you restate that question?

11:00:41 15 Q. Sure.

16 Has there been any change or update to  
17 Ripple's gift to the University of Michigan since  
18 your report was submitted in October of 2021?

19 A. You're referring to Exhibit 1?

11:00:50 20 Q. Yes.

21 MR. WHITE: Objection.

22 Objection to form of the last  
23 question.

24 THE WITNESS: Okay. Sorry.

11:00:53 25 MR. WHITE: You can answer.

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11:00:55 1 A. No.

2 Q. Are you familiar with the concept of a  
3 validator node that runs on the XRP Ledger?

4 A. Yes.

11:01:08 5 Q. Okay. Does the University of Michigan  
6 run a validator node on the XRP Ledger?

7 A. It does not.

8 Q. Has it ever?

9 A. Not that I know of. It's part of the  
11:01:36 10 restrictions of the gift agreement.

11 Q. I see.

12 Can we turn to the end of paragraph 12?

13 The last sentence of paragraph 12 says "As part of  
14 UBRI, the University of Michigan maintains a

11:01:55 15 validator node on the XRP Ledger (which I describe  
16 in greater detail below), but the University of  
17 Michigan has not actively participated in voting  
18 on the XRP Ledger because of university policies  
19 governing services under corporate gift

11:02:10 20 agreements."

21 Do you see that?

22 A. Yes.

23 Q. Okay. What does "maintains a node" --  
24 sorry. Strike that.

11:02:17 25 What does "maintains a validator node on

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11:02:20 1 the XRP Ledger" mean?

2 A. I would say we have the nodes or we are  
3 a node, but we're -- it's inactive. We don't get  
4 involved in any verification of transactions or  
11:02:31 5 anything. It's not active.

6 Q. So the -- the node maintained by the  
7 University of Michigan on the XRP Ledger does not  
8 validate transactions?

9 MR. WHITE: Objection. No  
11:02:43 10 question.

11 Q. Go ahead.

12 A. It -- it does not validate transactions.

13 Q. Okay.

14 A. And the maintenance part relates to that  
11:02:52 15 we do get the updates on the protocols and  
16 whatnot, that we get things to download, but we  
17 actually do not validate.

18 Q. Did anyone at Ripple ever ask anyone at  
19 the University of Michigan to run a validator node  
11:03:09 20 on the XRP Ledger?

21 MR. WHITE: Objection;  
22 foundation.

23 A. As part of the negotiations around the  
24 gift agreement, Ripple stated that they would like  
11:03:25 25 the University of Michigan to become an active

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11:03:29 1 validator node on the network. And the university  
2 said that that could not be part of the agreement.  
3 However -- because of policies that I cite to  
4 later, standard practice policies and gift  
11:03:42 5 acceptance; however, if researches would choose to  
6 maintain it or -- out of their -- out of their  
7 funds, they could, but it's -- so Ripple only  
8 asked at the time that we negotiated the gift  
9 agreement.

11:04:12 10 Q. What was the policy that prohibited the  
11 University of Michigan from being able to run a  
12 validator node on the XRP Ledger?

13 A. So I refer to page 7 in my report where  
14 I refer to that standard practice guide and  
11:04:41 15 policies. And this is the way I understand it,  
16 but I did not get involved in the negotiations  
17 between the university and UBRI. That the  
18 expectation of running a validator node under a  
19 gift agreement would constitute a contractual  
11:05:00 20 expectation which cannot be done under a gift  
21 agreement.

22 Q. A contractual expectation between what  
23 parties?

24 A. Between -- between Ripple and -- and the  
11:05:15 25 University of Michigan.



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11:05:20 1 Q. Who was involved, if you know, in the  
2 negotiations between Ripple and the University of  
3 Michigan around the gift arrangement?

4 MR. WHITE: Objection; form.

11:05:33 5 A. I do not know the names, but this goes  
6 to the Office of the Vice President for Research.

7 Q. Do you know who was involved on the  
8 Ripple end?

9 MR. WHITE: Objection; form.

11:05:51 10 A. I do not know who was involved on the  
11 Ripple end in the negotiations. I know who my  
12 contact person is, but I don't know if that person  
13 is involved in the actual negotiations of gift  
14 agreements.

11:06:03 15 Q. That's Ms. Weymouth?

16 MR. WHITE: Objection. No  
17 question.

18 Q. You can answer.

19 A. After August 2018, yes.

11:06:11 20 Q. And what -- you state in paragraph 15  
21 that your "communications with Ms. Weymouth have  
22 pertained to the use of the gift funds at the  
23 University of Michigan and our participation in  
24 the annual UBRI conference."

11:06:35 25 A. Yes.

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11:06:40 1 Q. Why were you speaking with Ms. Weymouth  
2 about the use of the gift funds at the University  
3 of Michigan?

4 A. Because she is the administrator and  
11:06:53 5 director of university relationships. And she  
6 will occasionally check in with the universities  
7 that have received gifts. And she said, "So how  
8 are you doing? What are you doing with this?"  
9 It's sort of a -- part of a regular check-in to  
11:07:16 10 maintain the relationship.

11 Q. So as part of the check-in, you explain  
12 to her how the university is using the gift funds.

13 MR. WHITE: Objection. No  
14 question.

11:07:23 15 A. Yes.

16 Q. Have you ever spoken at any of the UBRI  
17 conferences?

18 A. Yes.

19 Q. Which ones?

11:07:34 20 A. I spoke at the -- the 2020 conference  
21 and --

22 Q. What was the top -- sorry. Go ahead.

23 A. And that was on tokenization of  
24 infrastructure finance. And my students, some of  
11:07:55 25 my students, have spoken at the 2019 in-person

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11:07:58 1 conference at UC Berkeley.

2 Q. What was the topic of your students'  
3 presentation at the 2019 UBRI conference?

4 A. The development of a blockchain  
11:08:12 5 application for -- to track opioid prescriptions.

6 Q. Did that blockchain application involve  
7 the use of the XRP Ledger?

8 A. It did not.

9 Q. Did the topic of your speech involve the  
11:08:43 10 use of XRP or the XRP Ledger.

11 A. It referred to the opportunity, future  
12 opportunity, of the XRP Ledger. The topic is  
13 really about tokenization of infrastructure, of  
14 debt and equity financing of infrastructure. And  
11:09:08 15 we talked about the globalization of financing of  
16 infrastructure and, then, therefore, where the  
17 opportunity might be for a Ripple -- for an XRP  
18 application.

19 Q. Is the tokenization of financing  
11:09:22 20 infrastructure a topic that you researched?

21 A. Yes.

22 Q. And is it a topic that you research as  
23 part of the FinTech Collaboratory group?

24 A. In part, yes.

11:09:45 25 Q. Have you developed any applications

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11:09:46 1 regarding -- strike that.

2 Have you developed any applications on  
3 the XRP Ledger as part of your research at the  
4 University of Michigan?

11:09:58 5 A. Not to date.

6 Q. Have you developed any applications  
7 using XRP as part of your research at the  
8 University of Michigan?

9 A. Not to date.

11:10:09 10 Q. Are you working on any -- strike that.

11 Are you researching any projects in  
12 which either the XRP Ledger or XRP will be used  
13 currently?

14 A. Personally, I am not, but

11:10:24 15 Blockchain@Michigan, which is a computer science  
16 business student hub that focuses on decentralized  
17 applications on the blockchain, is -- one of the  
18 ledgers that they're exploring is XRPL.

19 Q. Is Blockchain@Michigan funded at all by  
11:10:46 20 UBRI?

21 A. Their administrative structure has some  
22 funding through UBRI as part of the Collaboratory.

23 Q. Are you personal friends with any  
24 current or former Ripple employee?

11:11:10 25 A. No.

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11:11:10 1 Q. Do you have a professional relationship  
2 with any current or former Ripple employee?

3 A. I would say that Asheesh Birla and  
4 Lauren Weymouth are the two people I have  
11:11:23 5 professional -- professional relationships with.

6 Q. Do you have any role with respect to the  
7 University of Michigan's running -- sorry. Strike  
8 that.

9 Do you have any role with respect to the  
11:11:34 10 University of Michigan's maintenance of the node  
11 on the XRP Ledger?

12 A. Sorry. Can you repeat that question?

13 Q. Sure.

14 Do you personally have any role with  
11:11:46 15 respect to the University of Michigan's  
16 maintenance of the node on the XRP Ledger?

17 A. Depends how you define "personally."  
18 One of the staff members in the department  
19 receives the pings from Ripple and updates on the  
11:12:06 20 software required, but that's it. It's basically  
21 just to keep it up-to-date, but I don't personally  
22 get involved in that.

23 Q. Can we turn to page 7 of your Appendix  
24 A?

11:12:41 25 A. I have it.

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11:12:42 1 Q. Okay. So under the "Research Grants and  
2 Contracts" section, the last entry is "Ripple."

3 Do you see that?

4 A. Yes.

11:12:49 5 Q. Is this the \$1 million gift that we've  
6 been discussing that's set forth in your report  
7 around paragraph 12 or 13?

8 A. Yes.

9 Q. Okay. Can you explain what PL and 2  
11:13:03 10 co-PLs mean?

11 A. Oh, it's the -- "PI" stands for  
12 principal investigator and co-PI, co-principal  
13 investigators, but essentially the three of us are  
14 at the same level. So it's one person designated  
11:13:17 15 in engineering, myself; one person designated in  
16 the business school; and one person designated in  
17 the School for Public Policy.

18 Q. And what does that term "principal  
19 investigator" mean?

11:13:31 20 A. Sort of the lead. The lead. In the  
21 context of a research grant, say from the National  
22 Science Foundation or -- or anything like that, in  
23 that context you're the one that's actually  
24 leading and directing the research. In this case  
11:13:46 25 it's basically the three of us that are

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11:13:48 1 collaborating in the Collaboratory.

2 Q. Okay. Do you have the same status with  
3 respect to the subsequent \$250,000 gift from UBRI?

4 A. We have maintained that relationship  
11:14:01 5 among the three co-PIs. That's right.

6 Q. Do you have an understanding of why it  
7 was that Ripple wanted the University of Michigan  
8 to run a validator node on the XRP Ledger?

9 A. Why they wanted that to be part of the  
11:14:52 10 gift?

11 Q. Yes.

12 A. No, I'm not sure.

13 Q. Have you ever had any discussions with  
14 anyone at the University of Michigan with respect  
11:15:07 15 to Ripple's request that the University of  
16 Michigan run a validator node on the XRP Ledger?

17 A. No. So once the decision was made  
18 higher up that we couldn't do it as part of the  
19 gift, that discussion was stopped. But every  
11:15:29 20 university has their own policy around that.

21 Q. Setting aside the University of  
22 Michigan's maintenance of a node on the XRP  
23 Ledger, have you ever run any kind of node on the  
24 XRP Ledger?

11:15:44 25 A. I have not.

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11:15:45 1 Q. Okay. Have you ever run any kind of  
2 node for any blockchain?

3 A. Personally I have not, no.

4 Q. Okay. Let's turn to paragraph 19 of  
11:16:01 5 your Exhibit 1, which was Opinion 1.

6 A. Page 19 of Exhibit 1?

7 Q. Sorry. Page 8, paragraph 19 of Exhibit  
8 1.

9 A. Okay. Yes.

11:16:22 10 Q. Okay. And your first opinion is listed  
11 here as "The XRP Ledger and its native currency,  
12 XRP, represented an important innovation in  
13 blockchain technology."

14 Do you see that?

11:16:30 15 A. Yes, I do.

16 Q. What criteria did you use to determine  
17 whether XRP and the XRP Ledger represented an  
18 important innovation in blockchain technology?

19 A. Going back to my background as a advisor  
11:16:52 20 for venture capital firms where we look at new  
21 technologies that come to market, we look at  
22 innovation from the perspective of is -- is this  
23 technology an improvement over, and a significant  
24 improvement over, existing technologies and in  
11:17:15 25 what capacity?



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11:17:17 1 And my aspects that I looked at were  
2 speed, cost, environmental costs, security.  
3 Issues like that.

4 And I referred to the incumbent  
11:17:35 5 technology or compared to the incumbent  
6 technology.

7 THE REPORTER: Income?

8 THE WITNESS: Incumbent.

9 THE REPORTER: Thank you.

11:17:42 10 THE WITNESS: Existing.

11 Q. And is it your opinion that the XRP  
12 Ledger is superior on the metrics of speed, cost,  
13 environmental costs, and security to preexisting  
14 blockchains?

11:17:56 15 MR. WHITE: Objection to  
16 form.

17 A. There was a lot of information packed in  
18 that question. Can you be more specific?

19 Q. Sure.

11:18:08 20 You -- my understanding of your previous  
21 response when I asked what criteria you used to  
22 determine whether something was an important  
23 innovation with respect to XRP and the XRP Ledger,  
24 the metrics that you mentioned were speed, costs,  
11:18:26 25 environmental costs, and security, is that right?

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11:18:28 1 Did I understand you correctly?

2 A. Those are among the ones that I looked  
3 at, yes.

4 Q. Okay. So I'm asking if it's your  
11:18:35 5 opinion that the XRP Ledger is superior to  
6 preexisting blockchains with respect to the  
7 metrics of speed, cost, environmental costs, and  
8 security.

9 MR. WHITE: Objection to  
11:18:41 10 form.

11 A. The transaction speed is faster than the  
12 incumbent technology at that time when it came up,  
13 which was bitcoin. The cost of a transaction was  
14 lower. Again, in the proposition. The  
11:19:07 15 environmental cost was lower just because of the  
16 type of consensus mechanism that they were using.  
17 And then the security features were different from  
18 what they were for the incumbent technology that  
19 led me to conclude security -- improved security.

11:19:31 20 Q. What were the features of the XRP Ledger  
21 versus incumbent technology that in your view led  
22 to improved security?

23 A. I'm mainly referring to the different  
24 consensus mechanisms that the XRPL was use -- uses  
11:20:06 25 to validate transactions.

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11:20:07 1 Q. Okay. Does that mean that it's your  
2 view that the XRP Ledger's consensus -- consen --  
3 strike that.

4 Is it your view that the XRP Ledger's  
11:20:15 5 consensus mechanism is more secure than bitcoin's  
6 consensus mechanism?

7 MR. WHITE: Objection; form.

8 A. It's not necessarily kind of a binary  
9 decision. It's -- it's a different kind of  
11:20:32 10 security mechanism and validation mechanism that  
11 would avoid 51 percent of tax, for example. And,  
12 so, I was looking from that perspective.

13 Q. Okay. Let's turn to the next page,  
14 paragraph 20, your Opinion 2.

11:21:07 15 A. Paragraph or page?

16 Q. Page 9, paragraph 20.

17 A. Okay.

18 Q. Opinion 2 reads "Ripple's iterative  
19 development of its business model and products is  
11:21:17 20 consistent with start-up practices in  
21 high-technology industries."

22 Do you see that?

23 A. Yes.

24 Q. Okay. And then at the very last  
11:21:24 25 sentence of that paragraph, you reference "market

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11:21:28 1 demand."

2 Do you see that sentence?

3 A. The last sentence of that -- yes.

4 Market demand, yes.

11:21:39 5 Q. What steps, if any, did you take to  
6 ascertain what market demand for Ripple products  
7 existed over the years?

8 MR. WHITE: Objection to  
9 form.

11:21:51 10 A. That was not the analysis that I did.  
11 The analysis I -- I mean, what I opined on in  
12 this -- in Opinion 2 is that Ripple, like other  
13 digital companies, develops different products,  
14 improvements on technology, to ultimately --  
11:22:18 15 develops marketing -- marketing strategies to  
16 actually position its technologies for broad  
17 adoption by the market.

18 But I -- this statement does not say  
19 whether they actually satisfy market demand. That  
11:22:32 20 is not what I intended with this sentence here.

21 Q. And it wasn't part of your, sort of,  
22 methodology to examine whether there was, in fact,  
23 any market demand for any Ripple product.

24 MR. WHITE: Objection; form  
11:22:50 25 and no question.

## CONFIDENTIAL SUBJECT TO PROTECTIVE ORDER

11:22:53 1 A. Ripple had a value proposition and part  
2 of its value proposition was to make international  
3 settlements easier, faster, and cheaper. And it's  
4 sort of a -- a business hypothesis or a market  
11:23:09 5 that they're going to. The question is, what is  
6 the path to market to go from where you are with  
7 your technology to servicing that ultimate market  
8 that you want to -- or one of these markets that  
9 you want to serve?

11:23:24 10 In fact, most of these technology  
11 start-up companies don't really even know  
12 necessarily what ultimately will become the  
13 beachhead market or the growth market that their  
14 technology will be -- will be deployed in nor what  
11:23:36 15 the ultimate product will be.

16 So it's very hard to actually do that  
17 analysis as -- as you're inquiring about.

18 Q. You just said most of the start-up  
19 companies don't even necessarily know what  
11:23:52 20 ultimately will become their beachhead market --

21 A. Mm-hmm.

22 Q. -- or -- I'm paraphrasing now -- what  
23 product will ultimately be successful, is that  
24 right?

11:24:01 25 A. Or which products, yes.

## CONFIDENTIAL SUBJECT TO PROTECTIVE ORDER

11:24:01 1 MR. WHITE: Objection; form.

2 Q. Is that true with Ripple as well?

3 MR. WHITE: Objection; form.

4 A. Well, if you look over the -- the arc of  
11:24:13 5 products that Ripple has developed since its  
6 inception and tested with different market  
7 participants from the Ripple corridor all way  
8 through to now Ripple Net, it is essentially a  
9 trial and error kind of process. And you'll find  
11:24:32 10 out over time if one has an open source ledger in  
11 which applications can be built, then what the  
12 ultimate use cases will become.

13 So that -- I would argue that they're  
14 still moving in that direction where they  
11:24:44 15 originally intended to move, but the diversity of  
16 use cases, as I outline later on, are examples of  
17 how third parties just use it for uses that are  
18 originally not intended by -- by Ripple.

19 Q. Let's go to same page, paragraph 21.  
11:25:15 20 Opinion 3 says "The XRP Ledger and its native  
21 currency, XRP, have commercial utility that third  
22 parties have leveraged in the creation or  
23 advancement of their business models,  
24 demonstrating the decentralized nature of the XRP  
11:25:30 25 Ledger."

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11:25:31 1 Do you see that?

2 A. Yes, I see that.

3 Q. How in your view does third-party  
4 leveraging of XRP demonstrate the decentralized  
11:25:39 5 nature of the XRP Ledger?

6 A. Well, the way in the context of my  
7 experience, again, of -- of advising companies,  
8 including blockchain companies, is when one has an  
9 open source platform on which applications can be  
11:26:03 10 built without a centralized authority to approve  
11 transactions, that in the sort of -- the current  
12 vernacular of both the academic and the business  
13 use of the word "decentralized," it constitutes as  
14 being a decentralized application.

11:26:37 15 Q. Let me ask a clarifying question. You  
16 concluded that answer by referencing a  
17 decentralized application.

18 Are you talking about the XRP Ledger  
19 when you use the word "application" or something  
11:26:46 20 else?

21 A. I'm sorry. I didn't mean to say  
22 application. The decentralized nature of the  
23 Ledger.

24 Q. Okay. So when you say "the  
11:26:54 25 decentralized nature" of the XRP Ledger, are you

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11:26:57 1 offering an opinion that the XRP Ledger is, in  
2 fact, decentralized?

3 A. In the context of how currently the word  
4 "decentralized" is used in the business literature  
11:27:13 5 and actually even in the academic literature --  
6 look at the MIT Digital Asset Lab -- it's still  
7 not even clear what the actual definition is of  
8 decentralized.

9 So in the way we're using it in that  
11:27:28 10 vernacular, yes.

11 Q. What is the definition of  
12 decentralized -- decentralization used in that  
13 vernacular?

14 A. There is no definition. It is really  
11:27:41 15 more of an understanding and an expectation.

16 Q. Can you describe the understanding and  
17 expectation that is called forth by the use of the  
18 word "decentralization"?

19 MR. WHITE: Objection; form.

11:28:06 20 A. Well, again, in that same context, from  
21 the perspective of the blockchain being  
22 permissionless, being open source and, therefore,  
23 accessible to third-party developers, having no  
24 central authority that verifies transactions, that  
11:28:31 25 validates transactions, sort of constitutes that.



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11:28:35 1 It is not a definition. It is a -- a working  
2 understanding of decentralization as used in these  
3 contexts.

4 Q. When you say "as used in these  
11:28:50 5 contexts," which contexts are you referring to?

6 A. I mean in the venture capital investment  
7 context, in the business context, business  
8 literature context, and in other academic lenses  
9 on, for example, as I said, just MIT digital  
11:29:13 10 currency initiative. They say, look, we don't  
11 really even know, we have to contextualize what we  
12 mean by decentralization, so, therefore, we can't  
13 adopt a definition of what it is. So we'll use a  
14 working knowledge of what we think it is.

11:29:30 15 Q. Mm-hmm.

16 Is -- so the general understanding of  
17 what decentralization means in your view, in the  
18 context you just described, is a blockchain that's  
19 permissionless, open source, accessible to  
11:29:45 20 third-party developers, and has no central  
21 authority that verifies transactions?

22 MR. WHITE: Objection. No  
23 question.

24 A. These are some broad characteristics  
11:29:57 25 that we use in sort of the -- the business

## CONFIDENTIAL SUBJECT TO PROTECTIVE ORDER

11:30:02 1 vernacular, yes.

2 Q. And are those the characteristics that  
3 you're referring to when you use the words  
4 "decentralized nature of the XRP Ledger" in  
11:30:10 5 paragraph 21?

6 A. In that nondefinitional descriptive  
7 understanding, that's what I did there, yes.

8 Q. Are there any academic publications that  
9 endorse the general understanding of  
11:30:33 10 decentralization as you just described it?

11 A. Well, in recent years, the scientific  
12 literature has sort of moved into a direction of  
13 trying to understand how decentralization should  
14 be understood, how it should be measured, how it  
11:30:53 15 should be defined. There's lots of working  
16 definitions out there, but there's no governing  
17 definitions -- governing definition at this point.

18 So there is no academic -- if that's  
19 what you're asking -- paper that states this  
11:31:04 20 working definition is the going definition. It  
21 is -- it is an understanding. It's not a  
22 definition.

23 Q. What's the distinction in your mind  
24 between an understanding and a definition?

11:31:18 25 A. It is a -- sort of a working knowledge

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11:31:22 1 of how people in general talk about a topic versus  
2 how academicians in the scientific literature  
3 would try to define a term and develop metrics and  
4 tools to measure those metrics. So that's sort of  
11:31:44 5 the difference. So the working level  
6 understanding versus the academic definitional  
7 approach.

8 Q. How is the existence of third-party  
9 applications on a blockchain related to the  
11:32:06 10 concept of decentralization of that blockchain, if  
11 it is?

12 A. Well, again, sort of referring back to  
13 my earlier answer, it goes to it being broadly  
14 available to a large community of developers and  
11:32:27 15 their users. That becomes an element of a  
16 decentralized system in this nondefinitional  
17 fashion, nondefinitional nature.

18 Q. In paragraph -- both paragraphs 21 and  
19 22, you reference "Ripple's vision." Do you see  
11:33:10 20 that? It's the second sentence of paragraph 21  
21 and also the second sentence of paragraph 22.

22 A. Yes.

23 Q. How do you know what Ripple's vision is  
24 or was?

11:33:21 25 MR. WHITE: Objection; form.

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11:33:29 1 A. There's no firsthand knowledge, but I  
2 used it from my working knowledge of Ripple, as  
3 well as reading the business cases, as well as all  
4 the publications in the business literature,  
11:33:47 5 financial magazines, crypto magazines, of what the  
6 aspirations were of what they sought to achieve.  
7 So that was the vision.

8 Q. Are all those publications that you just  
9 referenced cited in your report?

11:34:00 10 A. Yes, they are.

11 Q. Okay. You mentioned earlier that you  
12 reviewed Ripple's financial statements for, I  
13 believe, the years 2014 through 2020, is that  
14 correct?

11:34:26 15 A. Yes, I did.

16 Q. You're aware that the vast majority of  
17 Ripple's revenues over the years have come from  
18 sales of XRP?

19 MR. WHITE: Objection; form.

11:34:36 20 A. I have seen the P & L statement, profit  
21 and loss statements, within that, yes.

22 Q. Okay.

23 A. I'm referring to that.

24 Q. So you would agree with me that the vast  
11:34:49 25 majority of Ripple's revenues have come from XRP

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11:34:52 1 sales over the years?

2 MR. WHITE: Objection; form,  
3 foundation.

4 A. I'm going to have to look at a specific  
11:34:59 5 financial statement to actually verify my answer  
6 to your question.

7 Q. Okay. Sitting here today, you can't  
8 recall?

9 MR. WHITE: Objection; form.

11:35:08 10 A. It's been a while since I've read them  
11 and it depends on what year you're talking about.  
12 I don't recall.

13 Q. Okay. Professor, we talked a little  
14 earlier about consensus.

11:35:22 15 What is consensus? What does that term  
16 mean?

17 A. Consensus is a -- a set -- is a set of  
18 different mechanisms where different validators on  
19 a -- on a network decide as to whether or not to  
11:35:42 20 move the Ledger forward and add a block to the  
21 chain. And so there's different kinds of  
22 consensus mechanisms where proof of work and proof  
23 of stake and federated consensus mechanism that  
24 Ripple has to actually make that final encrypted  
11:36:03 25 decision to move the Ledger forward.

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11:36:06 1 Q. Do you consider yourself an expert in  
2 consensus?

3 A. Good enough working knowledge of it,  
4 yes.

11:36:15 5 Q. That wasn't quite my question.  
6 Do you consider yourself an expert in  
7 consensus?

8 A. How do you define "expert"?

9 Q. I'm asking what you consider yourself,  
11:36:26 10 sir. So do you consider yourself an expert in  
11 consensus?

12 A. Yes.

13 Q. What is the relationship, if any,  
14 between consensus and the question of the extent  
11:36:37 15 to which a blockchain is decentralized?

16 MR. WHITE: Objection; form.

17 A. Can you repeat that question, please?

18 Q. Sure.

19 What is the relationship, if any,  
11:36:55 20 between consensus and the question of the extent  
21 to which a blockchain is decentralized?

22 MR. WHITE: Objection; form.

23 A. It's -- the way I understand it, it's  
24 all about sufficient number of validators agreeing  
11:37:09 25 on moving the blockchain forward. And that's part

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11:37:15 1 of consensus mechanism. It's a consensus among  
2 validators.

3 Q. And how is that related to the concept  
4 of decentralization?

11:37:32 5 A. In that there is no single central  
6 authority making that decision, but independent  
7 nodes that do not -- validator nodes that do not  
8 trust each other achieving a path forward on the  
9 blockchain.

11:37:52 10 Q. Have you reviewed the paper entitled  
11 "The Ripple Protocol Consensus Algorithm" authored  
12 by David Schwartz, Noah Youngs, and Arthur Britto?

13 A. It sounds familiar, but I would have to  
14 take a look at that.

11:38:08 15 Q. Are you familiar with the term "Sybil  
16 attack"?

17 A. I've read about Sybil attack.

18 Q. What is Sybil attack?

19 A. As I'm sitting here, I cannot define it  
11:38:24 20 for you.

21 Q. Let me pose a hypothetical regarding the  
22 application of consensus using an example of  
23 something other than a blockchain. Okay?

24 A. So what's the hypothetical?

11:38:45 25 Q. The hypothetical is let's suppose

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11:38:47 1 there's a rocket and the rocket's direction is  
2 controlled by a navigation system. Okay?

3 MR. WHITE: Objection; form.

4 A. Mm-hmm.

11:38:53 5 Q. Okay. Let's say the rocket has a single  
6 navigation system to control its navigation.

7 A. Mm-hmm.

8 MR. WHITE: Objection, form,  
9 to that last question.

11:39:02 10 Q. Is this a centralized system?

11 MR. WHITE: Objection; form.

12 A. I find the analogy hard to reconcile  
13 with my notion of decentralized.

14 Q. I'm sorry. I didn't quite understand  
11:39:26 15 your answer.

16 Would you say that is a centralized  
17 system?

18 MR. WHITE: Same form  
19 objection.

11:39:31 20 A. What I say is that I have a hard time  
21 reconciling your example, your hypothetical, with  
22 the decision as to whether or not centralized, not  
23 centralized.

24 Q. Are you saying that my hypothetical  
11:39:43 25 doesn't provide enough information for you to know



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11:39:45 1 whether or not the system is centralized or  
2 decentralized?

3 MR. WHITE: Objection;  
4 mischaracterizes testimony.

11:39:49 5 A. That is not what I said. I was not  
6 looking for more information. I was just trying  
7 to find the context of your hypothetical to  
8 actually try to answer my question -- to answer  
9 your question.

11:40:01 10 Q. Okay. So can you answer the question as  
11 to whether or not that's a centralized system?

12 MR. WHITE: Objection; form.

13 A. Can you repeat your system?

14 Q. Sure.

11:40:12 15 So there's a rocket.

16 A. Mm-hmm.

17 Q. It has a navigation system. It's  
18 controlled by one single navigation system.

19 A. Mm-hmm.

11:40:18 20 MR. WHITE: Objection to form  
21 to this -- continue.

22 MR. SYLVESTER: I have to  
23 finish. Thank you.

24 MR. WHITE: I understand.

11:40:23 25 MR. SYLVESTER: Thank you.

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11:40:23 1 Q. Is this a centralized system?

2 MR. WHITE: Objection to  
3 form.

4 A. Given the narrowness of the information,  
11:40:34 5 the limited information that you're providing me,  
6 I would say there's a single point of failure.

7 Q. So does that mean the system is  
8 centralized?

9 A. I've never thought about centralization  
11:40:49 10 in that context so I can't answer your question.

11 Q. Okay. Generally, if there's a single  
12 point of failure in a system, does that mean the  
13 system is centralized?

14 MR. WHITE: Objection; form.

11:41:01 15 A. In a nondefinitional way, I mean, I  
16 would say yes.

17 Q. Let's say -- we're still with the  
18 rocket. Let's say instead of having one  
19 navigation system, it has two: A primary  
11:41:19 20 navigation system and a secondary navigation  
21 system.

22 A. Mm-hmm.

23 MR. WHITE: Objection to --  
24 sorry.

11:41:23 25 Q. Is that a centralized system?

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11:41:24 1 MR. WHITE: Objection to  
2 form.

3 A. It depends how these two navigation  
4 systems come to a decision.

11:41:38 5 Q. How does it depend? Can you explain  
6 your answer?

7 MR. WHITE: Objection to  
8 form.

9 A. I was saying -- oh, yes. Do the two --  
11:41:52 10 you said guidance systems? What did you call  
11 them?

12 Q. Navigation systems.

13 A. Navigation systems.

14 -- whether they depend on one another or  
11:42:00 15 not.

16 Q. Okay. Let's say the system is  
17 designed -- two navigation systems. It's -- it's  
18 designed -- the navigation systems are designed to  
19 take the navigation data from the primary and, if  
11:42:10 20 that one fails, then the secondary system.

21 Is that -- is that system centralized?

22 MR. WHITE: Objection; form.

23 A. I don't think there was enough of a  
24 decision to actually -- enough of a definition  
11:42:25 25 around centralization as to whether or not that

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11:42:28 1 would be centralized or not.

2 Q. I just want to make sure I understand  
3 your answer.

4 It's not that the hypothetical doesn't  
11:42:34 5 have enough information. It's that the concept of  
6 centralization isn't sufficiently defined to  
7 answer, correct?

8 A. To be able to answer that question, yes.

9 MR. WHITE: Objection; form.

11:42:45 10 Q. Let's say instead a rocket has three  
11 navigation systems and its navigation is  
12 controlled by majority voting.

13 Are you familiar with the majority  
14 voting system?

11:42:56 15 A. Yes.

16 MR. WHITE: Objection to  
17 form.

18 Q. Let's say in this hypothetical with  
19 three navigation systems one of those systems  
11:43:05 20 fails. It just simply ceases to operate.

21 What impact would that have on the  
22 rocket?

23 MR. WHITE: Objection; form,  
24 and relevance of a rocket analogy to  
11:43:15 25 blockchain.

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11:43:26 1 A. So you have three navigation systems and  
2 there's majority voting in these navigation  
3 systems and one navigation system falls out or  
4 fails. And then the question is?

11:43:48 5 Q. How would that affect the system's  
6 ability to operate?

7 MR. WHITE: Objection; form.

8 A. Again, given the limiting parameters of  
9 this hypothetical, those two remaining guidance  
11:44:10 10 systems are still -- I'm not sure how you're  
11 drawing the analogy there, but -- to centralized  
12 operation. So there is no longer -- if there's  
13 only two left, there is no longer a majority in  
14 your hypothetical. And if there's no longer a  
11:44:54 15 majority, then those decisions can't be -- the  
16 system fails, I guess.

17 Q. Okay. Let's say we have the three --  
18 three navigation systems, majority voting. Let's  
19 say two of the navigation systems simply fail.

11:45:10 20 Is that system centralized?

21 MR. WHITE: Objection; form.

22 A. If they have no fail-safes, no backup  
23 mechanisms? I think I -- there's just not enough  
24 information to actually make a decision on  
11:45:26 25 centralization.

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11:45:28 1 Q. Okay. Let's say instead of -- same --  
2 same rocket, same three navigation systems, same  
3 majority voting. Let's say instead of two of the  
4 systems simply failing they're taken over by the  
11:45:39 5 enemy, by a malicious actor.

6 MR. WHITE: No -- sorry.

7 Q. Is that system centralized?

8 MR. WHITE: Objection; form.

9 A. I have -- so what are the parameters  
11:45:54 10 again?

11 Q. The rocket has three navigation systems;  
12 they majority vote on navigation; a malicious  
13 actor takes over two of the voting systems.

14 Is that system centralized?

11:46:06 15 MR. WHITE: Objection; form.

16 A. Based on the information you're giving  
17 me and the analogy you're making or the -- the  
18 hypothetical you're providing me, it was still  
19 decentralized -- is it centralized? Is that your  
11:46:31 20 question?

21 Q. Yes.

22 A. No.

23 Q. Why not?

24 A. Because the original design was still  
11:46:39 25 three.

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11:46:45 1 Q. Is the system in my hypothetical  
2 controlled by one authority?

3 MR. WHITE: Objection to  
4 form.

11:46:58 5 A. After two are hijacked, or whatever you  
6 said --

7 MR. WHITE: Objection to  
8 form.

9 A. -- there's one left, but the rule of the  
11:47:07 10 system was majority -- I don't know. I'm kind of  
11 getting lost in the -- in the analogy here.

12 Q. Okay. Did you want me to repeat the  
13 question or -- would that be helpful?

14 A. Were the same conditions still the same  
11:47:29 15 in that analogy as in majority voting?

16 Q. Three navigation systems, majority  
17 voting, malicious actor takes over two.

18 Is that a centralized system?

19 MR. WHITE: Objection to  
11:47:38 20 form.

21 A. It would violate the majority protocol.

22 Q. Is it -- understanding your -- your  
23 response, is that -- is that meant to be a  
24 response to the question of whether or not it's a  
11:48:02 25 centralized system?

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11:48:04 1 A. I can't answer whether that's a  
2 centralized system.

3 Q. Okay. How might -- so we have a rocket  
4 with three navigation systems. How might we make  
11:48:13 5 the rocket --

6 THE REPORTER: Repeat.

7 MR. SYLVESTER: Yes.

8 Q. We have a knock -- a rocket with three  
9 navigation systems, majority voting.

11:48:20 10 How might we make the rocket's  
11 navigation system more resilient from attack?

12 MR. WHITE: Objection to  
13 form; calls for speculation.

14 A. Not being a rocket scientist, I mean, I  
11:48:34 15 wouldn't -- I wouldn't know.

16 Q. Let's switch to a blockchain on that  
17 analogy then. Let's take a --

18 A. Before you go there, can I go to the  
19 restroom, please?

11:48:42 20 Q. Yeah. Absolutely. Let's take a break.

21 THE VIDEOGRAPHER: Going off  
22 the record. The time is 11:50.

23 (Whereupon, a recess is taken.)

24 THE VIDEOGRAPHER: We'll go  
12:04:17 25 back on the record. The time is



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12:04:19 1 12:05.

2 BY MR. SYLVESTER:

3 Q. Professor, before I believe that you  
4 testified that you're familiar with the Byzantine  
12:04:27 5 generals problem, is that right?

6 A. As a -- at a high level, yes.

7 Q. Can you describe what that is?

8 A. It's basically where multiple -- I guess  
9 we can put it in the context of nodes, in the  
12:04:47 10 context of generals, that have to make a decision  
11 as to whether or not to take a certain action. In  
12 this case, for example, the action would be for  
13 the blockchain to move forward, but not all of  
14 the -- all of the generals actually have the same  
12:05:04 15 opinion of what they should be doing.

16 And then the -- the -- the problem is  
17 then how does one arrive at a consensus to move  
18 forward even independent of what -- of the  
19 majority to move forward independent of the ones  
12:05:21 20 that are not part of the majority will be doing.

21 So the Byzantine problem is often put in  
22 the context of -- of fault tolerance of a  
23 blockchain where, since all the nodes of the  
24 validators are untrusting of one another, the  
12:05:41 25 question then is when transactions need to be

120

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12:05:46 1 validated, we need to sort of get to a majority  
2 vote or arrive at a consensus. That's what a  
3 Byzantine problem is. And how do we communicate,  
4 I guess, how we move forward with a majority of  
12:06:03 5 generals or a majority of nodes.

6 Q. Professor, do you know how the XRP  
7 Ledger consensus mechanism works?

8 A. Yes.

9 Q. Can you describe how the XRP Ledger  
12:06:19 10 consensus mechanism works?

11 A. The Ledger -- and, again, I'm not going  
12 to go too deep into this, but the Ledger has  
13 unique node lists of multiple validators that will  
14 ultimately -- will decide on whether or not a  
12:06:48 15 transaction will -- well, first, there's the  
16 verification of the transaction, then there's the  
17 communication of the verification of the  
18 transactions, and then there is the majority vote  
19 on the -- any of the unique node lists that makes  
12:07:05 20 then a decision as to whether or not there is  
21 liveness on the blockchain as the transactions  
22 move forward.

23 Q. What's the role of the unique node list  
24 in validation on the XRP Ledger?

12:07:23 25 A. Ultimately they make the decision as to

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12:07:27 1 whether or not the transaction was -- the Ledger  
2 moves forward.

3 Q. The validators on the unique node list  
4 ultimately make that decision?

12:07:38 5 MR. WHITE: Objection. No  
6 question.

7 A. Unique node list make that -- makes that  
8 decision, yes.

9 Q. Yeah. What I'm trying to draw the  
12:07:50 10 distinction is, is it the list itself making the  
11 decision or is it the validators on the list  
12 making the decision?

13 A. I'm going to have to think about that.

14 So for consensus to -- to achieve  
12:08:12 15 consensus, the validators in the unique node lists  
16 have to agree, or 80 percent of them have to  
17 agree, as to whether to move the transaction  
18 forward.

19 Q. You testified earlier that one of the  
12:08:33 20 improvements of the XRP Ledger is speed, is that  
21 correct?

22 A. Yes.

23 Q. Is there any relationship between the  
24 XRP Ledger's consensus mechanism and its speed?

12:08:43 25 MR. WHITE: Objection; form.

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12:08:50 1 A. That is the information that I've taken  
2 from what is provided on the various citations  
3 that I've cited in my report, yes.

4 Q. Okay. So I think what you're saying is  
12:09:02 5 it's not your expert opinion that the XRP Ledger  
6 is faster, but you've gathered from the sources  
7 you've reviewed that the XRP Ledger is, in fact,  
8 faster?

9 A. It is my --  
12:09:11 10 MR. WHITE: Objection to  
11 form.

12 A. -- expert opinion in the comparison of  
13 the XRP Ledger and bitcoin, Ethereum, that the  
14 information that is available based on the type of  
12:09:24 15 consensus mechanism that is being used, proof of  
16 work or federate consensus, that the federate  
17 consensus mechanism is, in fact, faster than the  
18 two other ones.

19 Q. Do you know why it's faster than the two  
12:09:37 20 other ones?

21 A. We --  
22 MR. WHITE: Objection to  
23 form.

24 Go ahead.

12:09:46 25 A. In the context of bitcoin, for example,

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12:09:50 1 because there is no mining mechanism involved as  
2 in their consensus program, there is no  
3 requirement for six -- for agreement, I guess,  
4 among the -- for establishment, I guess, for one  
12:10:08 5 miner to be the fastest one to actually move a  
6 transaction forward. So the mining mechanism  
7 takes longer to allow a transaction to move  
8 forward, whereas the voting mechanism on this dUNL  
9 is a faster mechanism.

12:10:27 10 Q. What about the speed of the XRP Ledger  
11 compared to the Ethereum blockchain?

12 MR. WHITE: Same objection.

13 A. Again, I'm going to refer to my report  
14 where the information, I guess, in the comparison  
12:10:43 15 of the speed and time, and Ethereum is also a  
16 proof of work mechanism, though it's moving  
17 towards proof of stake, that the time it takes to  
18 ultimately validate and move a transaction forward  
19 takes longer than -- than XRP. It's not a voting  
12:11:01 20 mechanism. It's a mining mechanism.

21 Q. Is the XRP Ledger's consensus mechanism  
22 faster than a proof of stake consensus mechanism?

23 MR. WHITE: Objection; form.

24 A. I have not made that comparison.

12:11:17 25 Q. Do you know?

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12:11:17 1 MR. WHITE: Objection to  
2 form.

3 A. I do not know. And when I -- the  
4 opinion in my report on the innovation of the XRP  
12:11:29 5 Ledger over what existed at that time in the  
6 industry, that there was no Ethereum or proof of  
7 stake mechanism out there at that time. Was the  
8 second Ledger and so I could only compare it to  
9 blockchain -- only compare it to bitcoin. But I  
12:11:49 10 know from the literature, and I've cited to it,  
11 that the Ethereum transactions are slower, but I  
12 don't know about proof of stake.

13 Q. Okay. When was the XRP Ledger launched?

14 MR. WHITE: Objection; form.

12:12:09 15 A. What do you mean with the word  
16 "launched"?

17 Q. When did it come into existence?

18 A. So that is also ambiguous. When was it  
19 developed or when was it made public?

12:12:26 20 Q. Let's start with when was it developed?

21 A. I don't know the exact time of that, but  
22 it was obviously developed before it was publicly  
23 released.

24 Q. Who developed it?

12:12:36 25 A. The names of the people that developed

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12:12:46 1 it?

2 Q. Sure, if you know.

3 A. I believe it was in the Coinbase. Not  
4 Coinbase. What am I saying? OpenCoin. Sorry.

12:12:59 5 Q. Yeah, I meant the people who actually  
6 coded the XRP Ledger.

7 Do you know?

8 A. Oh, you mean the people. I believe  
9 David Schwartz was involved. Arthur Britto was  
12:13:15 10 involved. And I forgot who the third person was.

11 Q. Okay.

12 A. Jim. I forgot his last name.

13 Q. And when was the XRP Ledger made  
14 available to the public?

12:13:33 15 A. I don't know what the actual time was or  
16 date was when it was released to the public, but  
17 it was clearly after the development in -- maybe  
18 2013, in that order, based on my reading of the --  
19 of David Schwartz's deposition. I believe he  
12:13:53 20 makes reference to that date, late 2012/early  
21 2013.

22 Q. Who controlled the validators on the UNL  
23 at the time of XRP Ledger's public launch?

24 MR. WHITE: Objection; form.

12:14:21 25 A. I'm going to need to refer to other

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12:14:23 1 documents that would have that information in it.

2 Q. You're not sure sitting here today?

3 MR. WHITE: Same objection.

4 A. Ripple definitely controlled some  
12:14:37 5 validators, but I don't know who controlled which  
6 validator.

7 Q. I'm talking, just to be clear, at the --  
8 at the start when the XRP Ledger was made public.

9 At that point in time, do you know who  
12:14:47 10 controlled the validators?

11 MR. WHITE: Objection; form.

12 A. Again, I'm going to have to refer to a  
13 document that refers to that date and that  
14 information.

12:14:56 15 Q. And -- and that's because you don't  
16 know.

17 MR. WHITE: Objection to form  
18 and no question.

19 A. I'm not sure, but from what I've read,  
12:15:06 20 again, from David Schwartz's deposition, that  
21 Ripple controlled some of the validators.

22 Q. Did Ripple control all of the validators  
23 at that time?

24 MR. WHITE: Objection; form.

12:15:18 25 A. I do not recall. I'm going to have to



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12:15:20 1 refer to that deposition or other reports.

2 Q. Assuming that at the public launch of  
3 the XRP Ledger, Ripple controlled all of the  
4 validators on the UNL, would that make the XRP  
12:15:38 5 Ledger at that point in time centralized?

6 MR. WHITE: Objection; form.

7 A. Well, you're calling for my analysis of  
8 what is centralized and I am -- there's too many  
9 complexities, as I mentioned earlier, involved in  
12:15:57 10 what the definition is of centralized and  
11 decentralized.

12 Q. Right. Well, I'll ask you just to apply  
13 the general understanding that you described for  
14 us earlier.

12:16:04 15 MR. WHITE: Objection. No  
16 question.

17 Q. Do you understand what I mean or no?

18 A. Can you repeat that question?

19 Q. Sure.

12:16:15 20 Earlier, when we were discussing  
21 paragraph 21 of your report where you describe the  
22 decentralized nature of the XRP Ledger, you gave  
23 me your general understanding of what  
24 decentralized meant.

12:16:24 25 Do you recall that?

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12:16:26 1 A. In that context, yes.

2 Q. In that context.

3 So I'm asking you to apply that general  
4 understanding as you articulated it to this  
12:16:32 5 context that I am asking you about, which is a  
6 circumstance in which Ripple controls all of the  
7 validators on the UNL.

8 In that circumstance, applying your  
9 general understanding, would that make the XRP  
12:16:44 10 Ledger centralized?

11 MR. WHITE: Objection; form.

12 A. Well, again, calls for between us a  
13 common understanding of what the definition is of  
14 decentralized. So at that time -- or when I used  
12:17:01 15 "decentralized," I'm not defining centralized to  
16 decentralized. But the way I stated my  
17 understanding of -- the business level  
18 understanding of centralized and decentralized was  
19 that there were more aspects, I guess, to the XRPL  
12:17:24 20 when it was released to the public in that it was  
21 open. It -- it -- it allowed for third-party  
22 contracts.

23 And then this question of, well, if  
24 there was central authority that authorizes all  
12:17:46 25 transactions.

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12:17:47 1 Q. Right.

2 So even if there was a central authority  
3 that was required to authorize all transactions,  
4 in your view such a system could still be  
12:17:55 5 decentralized?

6 MR. WHITE: Objection; form  
7 and no question.

8 A. It could be because there are many  
9 layers to the structure of a blockchain or there  
12:18:07 10 are many layers to the structure of a blockchain.  
11 There's the validation layers, there's the  
12 governance layers, there's the network layers of a  
13 blockchain. And, therefore, whether one decides  
14 whether something is centralized or not depends on  
12:18:23 15 how you query the entire structure of the  
16 blockchain and not just the -- in your narrow  
17 example in 2013, when it was first released,  
18 making the assumptions that you are making is just  
19 one aspect of the centralization question and  
12:18:41 20 discussion.

21 Q. Okay. Can every block in every  
22 transaction that ever occurred on the XRP Ledger  
23 be viewed by anyone today?

24 MR. WHITE: Objection; form.

12:19:01 25 A. If you're referring to permissionless

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12:19:05 1 blockchains, that's the intent. As a node on the  
2 blockchain, as the University of Michigan is, we  
3 have a -- a shadow ledger and I can see all  
4 transactions in the blockchain.

12:19:23 5 Q. And are you -- is the University of  
6 Michigan able to view through its node all  
7 transactions on the XRP Ledger from its public  
8 launch until the present time?

9 MR. WHITE: Objection to  
12:19:33 10 form.

11 A. It is my understanding that if we wanted  
12 to, we would be able to.

13 Q. Are you aware that the XRP Ledger halted  
14 in November of 2021?

12:20:04 15 MR. WHITE: Objection; form.

16 A. No.

17 Q. Okay. Let's look at Exhibit 23.

18 (Whereupon, exhibit is  
19 received and marked SEC Adriaens  
12:20:13 20 Exhibit 23 for identification.)

21 BY MR. SYLVESTER:

22 Q. So Exhibit 23, Professor, is the  
23 printout from the website -- I won't read the  
24 entire URL as it appears at the bottom of the  
12:20:36 25 document, but it's from xrplf.org.

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12:20:41 1 Are you familiar with xrplf.org?

2 A. I've seen it, yes.

3 Q. Okay.

4 A. Seen reference to it.

12:20:49 5 Q. Is xrplf.org among the sources that you  
6 cite in your expert report?

7 A. I'm going to have to check that. I  
8 don't recall.

9 Q. Okay. So I take it -- let me ask the  
12:21:10 10 question.

11 Have you seen this document before  
12 today?

13 A. I have not.

14 Q. Okay. Take a minute to review it and  
12:21:15 15 then I'll ask questions. Let me know when you're  
16 ready.

17 (Pause)

18 A. I've had a chance to look through this  
19 document.

12:22:28 20 Q. Okay. Great.

21 As you can see, the document describes a  
22 network halt on November 3rd, 2021. And one of  
23 the items, number 3, says "In the wake of quorum  
24 loss, the system behaved as expected, valuing  
12:22:46 25 safety over liveness. The halt was the correct

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12:22:48 1 response."

2 Do you see that?

3 A. I see that.

4 Q. What does the phrase "quorum loss" mean  
12:22:53 5 there?

6 MR. WHITE: Objection;  
7 foundation.

8 A. I would have to speculate because I  
9 don't know, but the general use of the word  
12:23:07 10 "quorum" means that it is a majority.

11 Q. And does that have any relationship with  
12 the way in which the XRP Ledger -- the way in  
13 which the XRP Ledger's consensus mechanism works?

14 MR. WHITE: Objection; form  
12:23:28 15 and foundation.

16 A. I don't have enough information  
17 regarding this halt. I haven't done any analysis  
18 on this to try to understand, a better  
19 understanding of underlying theories behind these  
12:23:45 20 top line statements.

21 Q. Okay. Do you understand the phrase "the  
22 system behaved as expected, valuing safety over  
23 liveness"?

24 A. Yes.

12:23:54 25 Q. What does that mean?

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12:23:54 1 MR. WHITE: Objection.

2 A. So liveness means good things happen,  
3 forward -- forward movement of the -- of the  
4 blockchain. And safety is -- bad things can  
12:24:16 5 happen. And so basically it says the system  
6 behaved in a valued -- sort of protecting against  
7 bad things that could happen rather than moving  
8 the server forward.

9 But, again, that's just my analysis of  
12:24:34 10 the language, the statement as -- as -- as  
11 presented here. I really don't know more than  
12 that.

13 Q. Okay. Do you know if the XRP Ledger is  
14 designed to halt if a certain number of validators  
12:24:45 15 on Ripple's UNL stop validating transactions?

16 MR. WHITE: Objection; form.

17 A. I would have to speculate and go back to  
18 the workings of the XRPL on that.

19 Q. So you're not sure sitting here today,  
12:25:09 20 is that right?

21 MR. WHITE: Same objection.

22 A. So what is the question again?

23 Q. Is the XRP Ledger designed to halt if a  
24 certain number of validators on Ripple's UNL  
12:25:21 25 stopped validating transactions?

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12:25:23 1 MR. WHITE: Objection.

2 A. I would have to look at the information  
3 that I provided in my report, if at all, regarding  
4 that issue.

12:25:37 5 Q. Okay. So I just -- is your answer that  
6 the answer is in your report, but you don't know  
7 right now or --

8 MR. WHITE: Objection.

9 A. I cannot be certain, so I would have to  
12:25:46 10 refer to my report.

11 Q. Okay. And do you believe the answer to  
12 that question is in your report?

13 A. I have a discussion around safety and  
14 liveness and I'm going to have to look back at  
12:26:00 15 that section around safety and liveness in my  
16 report.

17 Q. Okay.

18 (Pause)

19 A. Sir, what was your question again?

12:27:19 20 Q. Sure.

21 Is the XRP Ledger designed to halt if a  
22 certain number of validators on Ripple's UNL stop  
23 validating transactions?

24 MR. WHITE: Objection.

12:27:30 25 A. Is it designed to halt? I can answer



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12:27:43 1 this more broadly that if validation protocol is  
2 violated, that a blockchain would not move  
3 forward.

4 Q. Right. And I'm asking a specific  
12:27:51 5 question about the XRP Ledger's validation  
6 protocol.

7 A. Mm-hmm.

8 Q. So is the XRP Ledger's validation  
9 protocol designed such that the XRP Ledger will  
12:28:04 10 halt if a certain number of validators on Ripple's  
11 UNL stop validating transaction?

12 MR. WHITE: Objection.

13 A. I'll have to verify what the conditions  
14 are under which the Ledger will halt.

12:28:15 15 Q. Okay. So you don't know either way  
16 sitting here today?

17 A. Yes. No. Sorry. I -- I do not -- that  
18 was a double negation there.

19 Q. Yes.

12:28:23 20 A. I do not know. I'll have to verify  
21 that.

22 Q. Okay. Let's turn to page 12 of your  
23 report, your Exhibit 1, paragraph 27. And I'm  
24 looking at the top, point 1.

12:28:41 25 A. Uh-huh.

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12:28:41 1 Q. Do you see where it says "Distributed  
2 (Decentralized) Database"?

3 A. Yes.

4 Q. And that heading is followed by three  
12:28:50 5 sentences.

6 Do you see that?

7 A. Yes.

8 Q. Do those three sentences describe a  
9 database that is both distributed and  
12:28:52 10 decentralized?

11 THE REPORTER: Repeat.

12 MR. SYLVESTER: Sure.

13 Q. Do those three sentences describe a  
14 database that is both distributed and  
12:29:01 15 decentralized?

16 A. The description here is pretty limited  
17 when it comes to distributed and decentralized.  
18 But, yes, each party in a blockchain has access to  
19 the entire database that is part of being

12:29:32 20 distributed. There's no single party that  
21 controls the data. That is one of the metrics  
22 related to decentralization as to the validation  
23 layer, but if you're asking does that describe  
24 distributed and decentralized, if -- at a very

12:30:03 25 high level it talks to the elements of distributed

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12:30:04 1 and decentralized.

2 Q. Okay. And did you -- strike that.

3 Did you create this description of  
4 distributed or decentralized database or did you  
12:30:20 5 draw it from another source?

6 A. Well, there's no citation here so this  
7 would be from the working knowledge around  
8 distributed and decentralized. My working  
9 knowledge based on my experience on the -- the  
12:30:45 10 boards of the venture funds.

11 Q. Okay. In general, in your report, when  
12 you drew a definition or a description from  
13 another source, was it your practice to cite that  
14 source?

12:31:05 15 A. Yes.

16 Q. Okay. One of the aspects of  
17 decentralization described here is no single party  
18 controls the data or information.

19 Do you see that?

12:31:26 20 A. Yes.

21 Q. In your view, is a system centralized if  
22 a single party does control the data or  
23 information?

24 MR. WHITE: Objection; form.

12:31:41 25 A. Depends how you -- how one defines the

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12:31:42 1 system. Because a -- a blockchain system has  
2 multiple layers and each of these layers have to  
3 be queried for centralized or decentralized.

4 Q. Okay. Narrowing just to the blockchain  
12:31:55 5 context and the consensus mechanism, if a single  
6 party controls the consensus mechanism, is the  
7 blockchain decentralized?

8 MR. WHITE: Objection to  
9 form.

12:32:07 10 A. The consensus mechanism or the protocol,  
11 the validation protocol?

12 Q. Either. We can answer them one at a  
13 time if you want. Let's start with consensus  
14 mechanism.

12:32:25 15 If a single party controls the consensus  
16 mechanism in a blockchain, is the blockchain  
17 decentralized?

18 MR. WHITE: Objection to  
19 form.

12:32:35 20 A. I cannot answer that question.

21 Q. Why is that?

22 A. Because the blockchain has more than  
23 just a consensus mechanism associated with it.

24 Q. Okay. I'm going to ask the same  
12:32:45 25 question the other way you put it.

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12:32:48 1 In -- in the context of a blockchain, if  
2 a single party controls the validation protocol,  
3 is the blockchain decentralized?

4 MR. WHITE: Objection to  
12:32:56 5 form.

6 A. The same answer because a blockchain is  
7 more than a consensus mechanism.

8 Q. Okay. Have you read the -- strike that.  
9 Let's go to paragraph 32, which is on  
12:33:17 10 page 15.

11 Have you read the white paper under  
12 the -- published under the pseudonym Satoshi  
13 Nakamoto referenced in paragraph 32?

14 A. At some point in time I have, yes.

12:33:42 15 Q. When did you first read it?

16 A. I don't exactly know, but this was  
17 between five and ten years ago, when I first got  
18 into blockchain.

19 Q. Have you read it more recently?

12:34:04 20 A. I have not.

21 Q. Okay. The first sentence of paragraph  
22 32, you describe -- strike that.

23 The first sentence of paragraph 32 is  
24 "Blockchain technology enables (among other  
12:34:17 25 things) a novel medium of exchange known as

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12:34:20 1 cryptocurrency."

2 Do you see that?

3 A. I see that.

4 Q. Are you offering any opinions in this  
12:34:24 5 case as to whether or not any cryptocurrency is a  
6 generally accepted medium of exchange?

7 A. Can you repeat that question?

8 Q. Sure.

9 Are you offering any opinions in this  
12:34:40 10 case as to whether any cryptocurrency is a  
11 generally accepted medium of exchange?

12 MR. WHITE: Objection to

13 form.

14 A. I don't think that is explicit in my  
12:34:48 15 opinions here, no.

16 Q. Okay. Let's go to the first sentence of  
17 paragraph 33. "The primary purpose of bitcoin was  
18 to securely store value in a public,  
19 decentralized, and self-sustained system."

12:35:03 20 Do you see that?

21 A. Yes.

22 Q. What's your -- what's your basis for  
23 that statement?

24 A. Just drawing on the general knowledge of  
12:35:15 25 what the purpose and the objective was of bitcoin.

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12:35:19 1 Q. And how did you obtain that general  
2 knowledge?

3 A. Conversational discussions, working  
4 knowledge in the financial technology space. No  
12:35:31 5 specific reference.

6 Q. Okay. Further down in the paragraph, do  
7 you see where it says "When a user sends bitcoin,  
8 the transaction is bundled in a block with 1,000  
9 to 2,500 other transactions and published to the  
12:35:44 10 network"?

11 A. I see that.

12 Q. What's your basis for that statement?

13 A. This is something I read probably on the  
14 specifics of how transactions were bundled.

12:36:03 15 Q. Is there any reason why there's not a  
16 source cited for that statement?

17 MR. WHITE: Objection to  
18 form.

19 A. It may have been not specific to this  
12:36:14 20 sentence, but around bitcoin I have a number of  
21 citations. So, no, I didn't specifically cite  
22 this, but this information is available in other  
23 references. It's in my report -- I mean it's in  
24 the citations in my report, but I wouldn't be able  
12:36:32 25 to point to the specific citation that actually

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12:36:34 1 says this.

2 Q. Okay. Let's go to paragraph 38. The  
3 bottom of -- the bottom of paragraph 38, so it's  
4 actually on page 18. The last sentence says

12:36:52 5 "Ether follows the same principles as bitcoin in  
6 that its rewards and distribution are regulated on  
7 a yearly basis."

8 Do you see that?

9 A. Right above paragraph 39?

12:37:04 10 Q. That's right, yes.

11 A. Yes.

12 Q. What's your basis for that statement?

13 A. Again, information from the literature  
14 on Ethereum.

12:37:11 15 Q. And which literature on Ethereum?

16 A. I don't know if it was from bitcoin.com.

17 One of the citations that I have in -- in my

18 report referred to that on a comparison of

19 different -- I think it had to do with the

12:37:27 20 different consensus mechanisms and the rewards of  
21 the different consensus mechanisms.

22 Q. And do you recall which -- which article  
23 you cited in your report has this proposition?

24 A. I do not, but as I indicated, I think it

12:37:54 25 is related to the different consensus methods that



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12:38:01 1 at one point I describe. I'd have to go back and  
2 see which of the cited references, cited  
3 footnotes, actually gets -- has this information.

4 Q. Is -- is there any reason that you  
12:38:15 5 didn't drop a footnote after this sentence here at  
6 the end of paragraph 38?

7 MR. WHITE: Objection to  
8 form.

9 A. I assume it to be common knowledge in  
12:38:24 10 the industry and I didn't -- it was not material  
11 to my opinion.

12 Q. Did you only include in your citations  
13 sources that were material to your expert opinion?

14 MR. WHITE: Objection; form.

12:38:53 15 A. I would say that I provided citations  
16 when the -- when I relied further on that  
17 information to come to an opinion. And if I did  
18 not rely on those -- that specific statement, then  
19 I didn't include the reference even if that  
12:39:13 20 reference was readily obtained from other  
21 references that I cited.

22 Q. Okay. Viewing your report as a whole,  
23 divorced from this paragraph 38, are there sources  
24 that you reviewed but that you didn't cite in your  
12:39:24 25 report because you did not rely on them?

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12:39:26 1 MR. WHITE: Objection; form.

2 A. Not that I recall, no.

3 Q. Okay. In paragraph 39, the next  
4 paragraph, there's a number of statements about  
12:39:38 5 energy consumption.

6 A. Yes.

7 Q. There's -- just to take one as an  
8 example, this -- "This is roughly equivalent to  
9 the annual energy draw of countries like  
12:39:50 10 Bangladesh and Chile."

11 Do you see that?

12 A. Yes, I see that.

13 Q. Where -- what are your bases for the  
14 statements that you make in paragraph 39 regarding  
12:40:00 15 the energy consumption of various countries?

16 MR. WHITE: Objection; form.

17 A. It's illustrative of the differences in  
18 energy use between different currencies.

19 Q. Sure, but what was your source of that  
12:40:19 20 information?

21 MR. WHITE: Objection; form.

22 A. I know that on the energy -- let's see.  
23 Twenty-three. So you're specifically referring to  
24 the specific sentence regarding Bangladesh and  
12:40:42 25 Chile?

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12:40:44 1 Q. There -- there's that sentence. The  
2 next sentence refers to consumption of American  
3 and Nigerian citizens. There's a sentence after  
4 that about the average U.S. household's energy  
12:40:54 5 consumption.

6 Just for any of these assertions, what  
7 was your source?

8 MR. WHITE: Objection; form.

9 A. I'm going to have to look back at that.  
12:41:11 10 And during the drafting of the report, later on in  
11 the report, I also again talk about the energy  
12 aspects of blockchains and there are citations  
13 there. So they may have been there instead of  
14 over here. I mean, I'm not entirely sure.

12:41:25 15 But even using this information is  
16 not -- it's illustrative and it's not salient to  
17 the opinion. What is salient to the opinion is  
18 how much energy is being used, not whether or  
19 not -- how it compares to energy consumption of  
12:41:43 20 Bangladesh and Chile.

21 Q. Mm-hmm.

22 But sitting here today, you're not sure  
23 from what source you drew that information  
24 regarding energy consumption in paragraph 39, is  
12:41:51 25 that right?

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12:41:52 1 MR. WHITE: Objection to  
2 form.

3 A. I'm going to have to -- sorry.  
4 I'm going to have to go back over the  
12:41:57 5 later citations and see if it was in there.

6 Q. Okay. Turning -- I'd like you to take a  
7 look at, as a whole, paragraphs 41, 42, 43, 44,  
8 45, 46, 47. It's just a few pages of your report.

9 A. Mm-hmm.

12:42:26 10 Q. I see a citation after the first  
11 sentence of paragraph 41, and then I see another  
12 one at the very end of paragraph 48, but I don't  
13 see any intermediate citations.

14 So my question for you is just why did  
12:42:46 15 you opt not to specifically cite the sources of  
16 the information in those intermediate paragraphs  
17 between 41 and 48?

18 MR. WHITE: Objection; form.

19 A. If you're asking was there a conscious  
12:43:01 20 decision to not cite this? No, there was not.

21 Q. Okay. So why was it that you opted not  
22 to provide citations to the individual  
23 propositions within those paragraphs?

24 A. A lot of this information that is  
12:43:21 25 presented in these paragraphs actually draws on

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12:43:32 1 both my own knowledge of the Ledger, engagement  
2 with Ripple, as well as references on the bottom,  
3 whatever citations on the bottom of page 19 that  
4 sort of state -- or refer to the text that I'm  
12:43:54 5 writing here.

6 I -- also, again, if you recall, I do  
7 talk about the product arc later on and some of  
8 the aspects that may refer to that and then come  
9 back over here.

12:44:09 10 So it's -- it's, I mean, overall  
11 knowledge that I've gained from my -- essentially  
12 my ten years of working in the blockchain space,  
13 financial technology companies, familiarity with  
14 Ripple. So there was no conscious decisions to  
12:44:27 15 opt to cite to or not cite to.

16 Q. Okay. Let's -- let's focus on paragraph  
17 43, "Decentralized Validation."

18 Do you see that?

19 A. Yes.

12:44:40 20 Q. For the statements in that paragraph,  
21 what were your sources, if any, that informed the  
22 statements in paragraph 43?

23 MR. WHITE: Objection to  
24 form.

12:44:52 25 A. Well, if you look at these statements,

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12:44:55 1 they're really very high-level statements about  
2 essentially what -- how decentralized validation  
3 is used in the context of -- as I referred to  
4 earlier, of both the business literature, the  
12:45:15 5 investor conversations, and even the academic  
6 literature, not necessarily being clear.

7 So I just sort of provide high-level  
8 statements here, not definitional statements. And  
9 because they were not definitional statements, I  
12:45:29 10 guess I must not have cited to them. They're just  
11 high-level elements.

12 Q. Okay. Did you draft paragraph 43?

13 MR. WHITE: Objection.

14 I'm going to instruct you not  
12:45:41 15 to answer on the same basis discussed  
16 earlier today.

17 Q. What is the difference, if any, between  
18 your description of decentralization in paragraph  
19 43 and the definition of decentralization that  
12:46:06 20 requires that no single authority is fully trusted  
21 by all?

22 A. So you're referring to paragraph 43 and  
23 what?

24 Q. There's a -- I want you to assume that  
12:46:28 25 one definition of decentralization requires that

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12:46:30 1 no single authority is trusted by all. That's one  
2 possible definition.

3 And what I'm asking is, sir, what's the  
4 difference between that definition and your  
12:46:37 5 description of decentralization in paragraph 43,  
6 if there is one?

7 MR. WHITE: Objection; form.

8 A. This is in the same high-level con --  
9 used in the same high-level context.

12:46:52 10 Q. I'm -- can you say more? What do you  
11 mean by "used in the same high-level context"?

12 MR. WHITE: Objection; form.

13 A. So you're asking me to compare what I  
14 say in paragraph 43 to what? To another  
12:47:06 15 definition?

16 Q. Yes.

17 A. So where did you get that other -- where  
18 does the other definition come from?

19 Q. Well, I mean, it comes from Troncoso,  
12:47:13 20 but it kind of doesn't matter. Assume it's a  
21 definition.

22 MR. WHITE: Objection. No  
23 question.

24 A. I -- I was not aware --

12:47:20 25 Q. Okay. So --

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12:47:20 1 A. -- where you were citing.

2 Q. Okay. So there's a definition that  
3 something is decentralized if no single authority  
4 is fully trusted by all. Let's just assume that's  
12:47:32 5 the definition.

6 A. It's a definition.

7 Q. Yes, exactly.

8 Is there any difference between that  
9 definition and the description you set forth of  
12:47:39 10 decentralized validation in paragraph 43?

11 MR. WHITE: Objection to  
12 form.

13 A. I have not done that analysis and that  
14 was not the intent of this opinion to define  
12:47:56 15 decentralization.

16 Q. Okay. In the middle of paragraph 43,  
17 you write "Decentralized networks strive to reduce  
18 the level of trust (and thus dependence) that  
19 participants must place in each other and deter  
12:48:08 20 their ability to exert authority or control over  
21 one another in ways that degrade the functionality  
22 of the network."

23 Do you see that?

24 A. I see that.

12:48:16 25 Q. Okay. You write "decentralized networks



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12:48:20 1 strive to."

2 Who or what is doing the striving?

3 MR. WHITE: Objection; form.

4 A. Who or what is doing the striving?

12:48:35 5 Q. Mm-hmm. Yes.

6 MR. WHITE: Same objection.

7 A. I think here I referred to the design of  
8 decentralized networks and any design tries to  
9 achieve a certain objective.

12:48:50 10 Q. Okay. Let me ask a question about the  
11 last sentence of paragraph 43. You write "In  
12 other words, the purpose of decentralized  
13 validation is to avoid one party having outsized  
14 control over one another to make a network  
12:49:26 15 decision (to validate a transaction)."

16 Do you see that?

17 A. I see that.

18 Q. Okay. If one party must be trusted to  
19 validate a transaction, is it fair to say that  
12:49:36 20 that party has outsized control over others to  
21 validate the transaction?

22 MR. WHITE: Objection; form.

23 A. Can you rephrase that question, please?

24 Q. Sure. Or I'll try to.

12:49:54 25 Let's assume that one party is in

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12:49:58 1 control of transaction validation.

2 My question is, is it fair to say that  
3 that party has outsized control over other parties  
4 in making a network decision; i.e., validating  
12:50:14 5 transactions?

6 MR. WHITE: Object to form;  
7 incomplete hypothetical.

8 A. Sorry. I'm going to ask you to read --  
9 I'm going to ask you to repeat it again because  
12:50:42 10 I'm trying to read it in this sentence.

11 Q. Sure.

12 So the way I understand the sentence  
13 is -- well, let me just read it again. You write  
14 "The purpose of decentralized validation is to  
12:50:56 15 avoid one party having outsized control over one  
16 another to make a network decision (to validate a  
17 transaction)."

18 And so my question is, if one party has  
19 the authority or must be trusted to validate a  
12:51:06 20 transaction, does that party have outsized control  
21 over others?

22 MR. WHITE: Objection to  
23 form; incomplete hypothetical.

24 A. In a generic sense, just like this is a  
12:51:17 25 generic statement, that would be the implication,

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12:51:19 1 yes.

2 Q. Okay. I want to show you what's been  
3 marked PA 24.

4 (Whereupon, exhibit is  
12:51:26 5 received and marked SEC Adriaens  
6 Exhibit 24 for identification.)

7 BY MR. SYLVESTER:

8 Q. Here you go.

9 So PA 24 has a URL at the bottom, but I  
12:51:44 10 can tell you that it's from Amazon.com. And I'd  
11 like you to read the first two sentences under the  
12 first question "What is decentralization?"

13 Do you see that?

14 A. Yes.

12:52:04 15 Q. Okay. Can you read those aloud, please?

16 A. "In blockchain, decentralization refers  
17 to the transfer of control and decision-making  
18 from a centralized authority (individual,  
19 organization, or group thereof) to a distributed  
12:52:24 20 network. Decentralized networks strive to reduce  
21 the level of trust that participants must place in  
22 one another, and deter their ability to exert  
23 authority or control over one another in ways that  
24 degrade the functionality of the network."

12:52:41 25 Q. Okay. So have you seen this document

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12:52:42 1 before, this Amazon page?

2 A. No.

3 Q. Okay. Can you explain why the first two  
4 sentences of your paragraph 43 are almost word for  
12:52:55 5 word the text of this Amazon page?

6 THE REPORTER: The last part.

7 Are almost word for word...?

8 MR. SYLVESTER: The text of  
9 this Amazon page.

12:53:12 10 A. Well, I am -- I don't know where -- as I  
11 said, I've never seen this document. I don't know  
12 where the language in this document was taken  
13 from, whether that is originally from Amazon or  
14 came from another reference. And I do not recall  
12:53:36 15 at this point where and how through the literature  
16 I arrived at the structure of the sentence.

17 Q. Did you copy the first two sentences --  
18 sorry. Strike that.

19 Did you copy the text from this page in  
12:53:57 20 Exhibit 24 into the first two sentences of your  
21 expert report?

22 A. I did not.

23 Q. Did anyone else?

24 MR. WHITE: Objection.

12:54:08 25 I'm instructing you to

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12:54:10 1 exclude from your answer any  
2 communications with counsel.

3 A. Sorry. What was your question?

4 Q. Did anyone else copy the text from the  
12:54:20 5 Amazon web page at Exhibit 24 into your report at  
6 paragraph 43?

7 MR. WHITE: Same objection  
8 and instruction.

9 A. That is outside of my knowledge. I  
12:54:29 10 wouldn't know.

11 Q. You wouldn't know.

12 MR. WHITE: Same objection  
13 and instruction.

14 A. I didn't -- how we arrived -- how I  
12:54:39 15 arrived at the sentence structure and where it  
16 came from relative to the other documents that I  
17 cited. It's not clear what the reference or the  
18 relationship is between the Amazon document and  
19 the two sentences there and where this was derived  
12:54:54 20 from, from other sources that I did cite.

21 Q. You would agree with me, though, that  
22 it's an almost word-for-word recreation of the  
23 Amazon document in your expert report?

24 A. It is very close, yes.

12:55:09 25 Q. And sitting here today, you're not sure

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12:55:11 1 why?

2 A. That's correct. I don't know.

3 Q. Okay. Let's move on to paragraph 44.

4 The first sentence is "Since there is no central  
12:55:24 5 authority present to validate and verify the  
6 transactions, and every transaction in a  
7 blockchain is considered completely secured and  
8 verified, consensus protocols are a core part of  
9 any blockchain network."

12:55:33 10 A. Yes.

11 Q. What's your source for that statement?

12 A. That is sort of a general statement  
13 around how blockchains are designed.

14 Q. Okay. You say "considered completely  
12:55:57 15 secured and verified."

16 Do you see that?

17 A. Yes.

18 Q. Considered by what or by whom?

19 A. It would be through the validation  
12:56:14 20 mech -- the consensus mechanism.

21 Q. Okay. And -- and you go on to define  
22 consensus mechanism in the next sentence, is that  
23 right?

24 A. There are four consensus protocols or a  
12:56:26 25 core part, right.

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12:56:27 1 Q. Okay. And you go on to define consensus  
2 mechanism in the next sentence, is that right?

3 A. Yes.

4 Q. What source did you rely on, if any, for  
12:56:41 5 your definition of consensus mechanism?

6 A. Again, I'm going to have to refer to  
7 some of my earlier citations from which I referred  
8 for many aspects or components of my report. I --  
9 I don't know.

12:57:02 10 Q. Okay. This isn't -- strike that.  
11 You did not create the definition of  
12 consensus mechanism described in paragraph 44, is  
13 that right?

14 A. It's a description, a description that's  
12:57:17 15 out there.

16 Q. Okay. Paragraph 45 you write that  
17 the -- second sentence. "The Ledger is  
18 standardized with regard to protocols (objectives  
19 in the consensus algorithm) and acceptance of  
12:57:31 20 validators on to the network, and it is  
21 decentralized with respect to how transactions are  
22 validated."

23 Do you see that?

24 A. Yes.

12:57:40 25 Q. Okay. What does "standardized with

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12:57:41 1 regard to protocols (objectives in the consensus  
2 algorithm)" mean?

3 A. Well, every consensus mechanism on a  
4 blockchain has a consensus -- has a protocol that  
12:58:01 5 is the standard how the blockchain is supposed to  
6 operate and how it's supposed to validate  
7 transactions.

8 Q. What does the word "standardized" mean  
9 in describing that -- those protocols?

12:58:23 10 A. The protocol is essentially the  
11 governing document of how the blockchain operates.

12 Q. Is that the underlying code of the XRP  
13 Ledger?

14 MR. WHITE: Objection to  
12:58:29 15 form.

16 A. You could refer to it as that, yes.

17 Q. Okay. You describe Ripple's release of  
18 a recommended UNL in paragraph 45.

19 Do you see that?

12:58:55 20 A. In 45?

21 Q. Yes.

22 A. Okay.

23 Q. What is the process for the placement of  
24 validators onto Ripple's UNL, if you know?

12:59:12 25 A. Well, if validator nodes are active,



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12:59:19 1 they can be added to a UNL pending approval of the  
2 other validators within that UNL.

3 We're talking in general about UNLs?

4 Q. No, just Ripple's UNL.

12:59:33 5 What's the process for the selection of  
6 validators that are placed onto Ripple's UNL?

7 A. It is my understanding that Ripple has  
8 to approve of those validators.

9 Q. And do you know what metrics, if any,  
12:59:50 10 Ripple applies to its approval process for  
11 validators to be placed on its UNL?

12 A. I don't know specifically. I know more  
13 generally that a validator has to be trusted; has  
14 to be active and online; has to be -- has to have  
13:00:11 15 participated on the Ledger. So sort of a -- a  
16 history, I guess, of that particular node or --  
17 but I don't know exactly what the criteria are.  
18 These are just some features, I guess, associated  
19 with those nodes.

13:00:39 20 Q. When you say -- I'm repeating your  
21 testimony as I understand it. "I don't know  
22 specifically. I know more generally that a  
23 validator has to be trusted; has to be active and  
24 online; has to be -- has to have participated on  
13:00:51 25 the Ledger."

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13:00:53 1 In that sentence is it trusted by  
2 Ripple?

3 A. I'm sorry. I misstated. It doesn't  
4 have to be trusted. It has to be -- there has to  
13:01:01 5 be historical evidence of that particular  
6 validator to be an active validator, have -- is  
7 online a lot of the time, has participated in  
8 prior transactions. So some history of that.

9 That would make it into the -- you're  
13:01:21 10 specifically referring to a dUNL. But I don't  
11 know about the actual protocol and how they select  
12 them. I just know some of the characteristics  
13 because they referred to that in the Schwartz  
14 document.

13:01:32 15 Q. Is it fair to say that if Ripple selects  
16 validators for inclusion on Ripple's UNL, that  
17 Ripple trusts those validators?

18 A. I did not opine on that.

19 Q. What -- let me ask you this.

13:01:48 20 In paragraph 45 you say "In addition,  
21 Ripple releases a recommended unique node list  
22 (UNL) of trusted and verified" validate --  
23 "validators."

24 A. Mm-hmm.

13:01:57 25 Q. Do you see that?

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13:01:58 1 A. Yes.

2 Q. Trusted by whom?

3 A. I would assume that would be by the  
4 other validators on the UNL as well as by Ripple

13:02:14 5 because they published that dUNL.

6 Q. Okay.

7 A. In fact, I'm speculating there. I don't  
8 know what the actual process is.

9 Q. I'm not sure I understand.

13:02:33 10 When you use the word "trusted" in this  
11 sentence in your report, who was doing the  
12 trusting?

13 A. The intent of the sentence was not to be  
14 that specific around who is doing the trusting.

13:02:50 15 It's basically reliable validators. That's really  
16 the intent of the statement.

17 Q. Okay. So fair to say that in Ripple's  
18 view, Ripple includes validators on its list that  
19 Ripple views as reliable?

13:03:04 20 MR. WHITE: Objection; form,  
21 foundation.

22 A. That would be the intent of the  
23 sentence, but, as I said, I don't really know the  
24 actual protocol that Ripple used to select the  
13:03:18 25 validator -- validators.

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13:03:21 1 Q. Okay. The last couple of sentences of  
2 paragraph 45, "XRP Ledger users are not required  
3 to use these validators for transactions." I'll  
4 stop there.

13:03:32 5 Do you see that?

6 A. Yes.

7 Q. With -- is the reference -- strike that.

8 Is the phrase "these validators" a  
9 reference to the validators that are listed on

13:03:45 10 Ripple's UNL?

11 A. You know, that's a little confusing  
12 here.

13 Sorry, what was your question?

14 Q. Is the phrase "these validators" that  
13:04:14 15 appears in the second-to-last sentence of  
16 paragraph 45 a reference to the validators that  
17 are listed on Ripple's UNL?

18 A. Yes. It says essentially that the XRP  
19 Ledger users are not required to use the dUNL for  
13:04:31 20 transactions --

21 Q. Okay.

22 A. -- to validate transactions. That was  
23 the intent of the sentence.

24 Q. Okay. If nodes do not use the  
13:04:50 25 validators on Ripple's UNL, are there any risks to

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13:04:57 1 the nodes who opt not to use that UNL?

2 MR. WHITE: Objection; form.

3 A. It is my understanding there are other  
4 UNLs available and other UNLs in the future that  
13:05:11 5 could be created.

6 Q. Focusing just on the present, what's  
7 your understanding about the degree of overlap in  
8 the lists among the various UNLs that Ripple  
9 publishes?

13:05:28 10 MR. WHITE: Objection to  
11 form.

12 A. It seems like there were multiple  
13 questions in that question. Part of it is, are  
14 there other UNLs?

13:05:47 15 Q. That's a fair point.  
16 Ripple publishes its own UNL, correct?

17 A. Yes.

18 Q. Okay. In the current iteration of the  
19 Ripple code, is Ripple's UNL the only Ripple UNL  
13:05:59 20 available?

21 A. No.

22 Q. Okay.

23 THE REPORTER: I'm sorry?

24 THE WITNESS: No. Sorry.

13:06:04 25 THE REPORTER: Thank you.

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13:06:04 1 Q. There are other UNLs that are currently  
2 listed in the Ripple-D code, is that right?

3 A. There's other UNLs available, yes.

4 Q. Okay. Focusing just on the UNLs that  
13:06:17 5 are listed in the Ripple-D code, are you aware of  
6 the extent of the overlap of the validator lists  
7 among those UNLs with Ripple's UNL?

8 A. Am I aware there's overlap?

9 Q. I'm asking if you know whether or not  
13:06:32 10 there's overlap.

11 A. By reading some of the documents that  
12 I'm citing to, I'm aware that there is some  
13 overlap.

14 Q. But is it a perfect overlap between the  
13:06:47 15 lists?

16 MR. WHITE: Objection to  
17 form.

18 A. I do not have that information here as  
19 I'm sitting here.

13:06:53 20 Q. Okay.

21 MR. SYLVESTER: Should we  
22 break for lunch? We're right about  
23 one. Does that work for you?

24 MS. ZORNBERG: Sure.

13:07:04 25 MR. WHITE: Yes.

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13:07:04 1 MR. SYLVESTER: Okay.  
2 THE VIDEOGRAPHER: Going off  
3 the record. The time is 1:08.  
4 (Whereupon, a luncheon recess  
13:07:09 5 is taken.)

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13:07:09 1                   A F T E R N O O N   S E S S I O N  
2                   THE VIDEOGRAPHER: We'll go  
3                   back on the record. The time is 2:11.  
4 BY MR. SYLVESTER:  
14:09:54 5           Q. Professor, I'd like to start with  
6 paragraph 46 on page 21 of your Exhibit 1.  
7           A. Okay.  
8           Q. The first sentence of that paragraph is  
9 "The XRP Ledger's consensus protocol breaks up the  
14:10:12 10 common notion of a shared set of validator nodes."  
11           Do you see that?  
12           A. Yes.  
13           Q. What do you mean here by "a shared set  
14 of validator nodes"?  
14:10:48 15           A. As I understand in my writing, I  
16 intended that to mean that every node can choose  
17 who they -- can choose the UNL that they work  
18 with.  
19           Q. And that's reflected in the next  
14:11:02 20 sentence, "Rather, it lets every node declare  
21 other nodes it subjectively trusts in a UNL"?  
22           A. Yes.  
23                   MR. WHITE: Objection. No  
24                   question.  
14:11:14 25           Q. Okay. If a node departs from the Ripple

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14:11:16 1 UNL and instead creates its own list of validators  
2 it subjectively trusts, what, if anything, will  
3 ensure that it remains on the XRP Ledger and does  
4 not fork?

14:11:28 5 MR. WHITE: Objection; form.

6 A. I don't think I'm prepared to answer  
7 that question. As I indicated this morning, my  
8 knowledge on blockchain and consensus and the  
9 features are at the business implementation and  
14:11:57 10 business development level. And some of the  
11 technical aspects and underlying code and  
12 protocol, issues like what you're referring to  
13 right now, I cannot -- I cannot directly answer.  
14 I do not have that level of expertise.

14:12:17 15 Q. Okay. And when you say you cannot  
16 answer, is it because you don't know?

17 MR. WHITE: Objection; form.

18 A. I do not have that expertise.

19 Q. Okay. Let's look at paragraph 47 of  
14:12:33 20 your report. The first two sentences say "Not all  
21 XRP Ledger validators participate in the consensus  
22 process all the time. In fact, a smaller subset  
23 of validators consistently is responsible for  
24 approval of transactions, and serves three  
14:12:47 25 functions," and the sentence continues, but my

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14:12:51 1 question is about the approval of transactions.

2 Is the smaller subset of validators that  
3 is consistently responsible for approving  
4 transactions the validators that are listed on

14:13:01 5 Ripple's UNL?

6 MR. WHITE: Objection; form.

7 A. I don't think there's anything in this  
8 paragraph that refers to Ripple's UNL.

9 Q. Right. I understand that, sir. I  
14:13:20 10 meant -- I'm asking if that's -- if that's an  
11 accurate statement.

12 So you write "a smaller subset of  
13 validators consistently is responsible for  
14 approval of transactions."

14:13:30 15 A. Uh-huh.

16 Q. What is that "smaller subset"?

17 A. Again, I think that asks to a level of  
18 technical knowledge that I cannot respond to.

19 Q. But you wrote this, right?

14:13:45 20 A. Yes.

21 Q. So what was your basis at the time of  
22 writing for your understanding that a smaller  
23 subset of validators consistently is responsible  
24 for approval of transactions?

14:13:56 25 A. As a matter of -- the intent was to

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14:14:00 1 write these paragraphs, as I indicate at the  
2 beginning in paragraph 41, as sort of an overview  
3 of the XRP Ledger based on the references cited in  
4 26 and it states sort of as a matter of knowledge  
14:14:21 5 that is out there rather than as an analysis. It  
6 was also not materially analysis to -- material to  
7 my analysis and opinions.

8 Q. Sitting here today, do you know whether  
9 or not it's true that a smaller subset of  
14:14:34 10 validators consistently is responsible for  
11 approval of transactions?

12 A. I have no reason to disagree with that.

13 Q. I'm asking if you affirmatively agree.

14 Do -- do you -- do you have a basis to  
14:14:57 15 believe it's true?

16 MR. WHITE: Objection to  
17 form.

18 A. Not beyond the information that I've  
19 gathered, but not from my own practical knowledge.

14:15:07 20 Q. Okay. And -- and what is the -- what is  
21 the source for this sentence in paragraph 47?

22 A. Again, I refer you back to the citation  
23 26 which is for present purposes going forward.

24 And a lot of this actually refers to various  
14:15:26 25 different sources consulted in 26, which was a lot

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14:15:28 1 of sources including a lot of Ripple -- Ripple  
2 sources, Ripple website information.

3 Q. Do you know which of those sources cited  
4 in 26 support the proposition that a smaller  
14:15:42 5 subset of validators consistently is responsible  
6 for approval of transactions?

7 A. I don't know and I will have to review  
8 some of these websites.

9 Q. Did you write paragraph 47?

14:16:20 10 MR. WHITE: Objection. I'm  
11 going to instruct the witness not to  
12 answer for the reasons previously  
13 stated.

14 MR. SYLVESTER: And what are  
14:16:28 15 the reasons previously stated?

16 MR. WHITE: That the drafting  
17 process is protected by the work  
18 product privilege.

19 MR. SYLVESTER: Okay.

14:16:37 20 BY MR. SYLVESTER:

21 Q. I want to show you what's been marked  
22 Exhibit 22, please.

23 (Whereupon, exhibit is received  
24 and marked SEC Adriaens Exhibit 22  
14:17:05 25 for identification.)

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14:17:19 1 MR. SYLVESTER: Great. So  
2 here you go.

3 BY MR. SYLVESTER:

4 Q. So Exhibit 22 is a printout from a  
14:17:29 5 website, that appears at the bottom of the  
6 document, from xrpl.org.

7 A. Uh-huh.

8 Q. Professor, you did cite xrpl.org as one  
9 of your sources in -- in your report, correct?

14:17:45 10 A. I do cite that in Footnote 26, yes.

11 Q. Okay. The portion of this -- well, let  
12 me ask you this: Have you seen this -- this  
13 publication on xrpl.org prior to today?

14 A. As I mentioned, I did look at xrpl.org.

14:18:05 15 Q. Mm-hmm.

16 A. And this may or may not have been, I  
17 guess, the information that -- that I've seen.

18 Q. Okay. Let me ask a better question.

19 If you turn to the second page, do you  
14:18:19 20 see where it says "Validator Overlap  
21 Requirements"?

22 A. Yes.

23 Q. Have you -- have you read this section  
24 about validator overlap requirements on xrpl.org?

14:18:45 25 A. If this is what was the link, xrpl.org,

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14:18:48 1 then I have read it.

2 Q. Does it look familiar to you sitting  
3 here today?

4 A. I cannot be certain.

14:18:58 5 Q. Okay. If you wouldn't mind taking a  
6 moment just to review those few paragraphs under  
7 "Validator Overlap Requirements," I just have a  
8 few questions.

9 (Pause)

14:20:17 10 A. I've read it.

11 Q. Okay. Let's start here.

12 Did you disagree with anything that you  
13 read in the three paragraphs under "Validator  
14 Overlap Requirements"?

14:20:24 15 MR. WHITE: Object to form.

16 A. I do not have the technical background  
17 to either agree or disagree. It's just stated  
18 as -- as written.

19 Q. Okay. Do you see where it says --  
14:20:51 20 strike that.

21 If a validator selects a UNL that  
22 overlaps less than 90 percent with other UNLs,  
23 what risk does that pose?

24 MR. WHITE: Objection; form,  
14:21:03 25 calls for speculation.

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14:21:12 1 A. You're asking me to do a technical  
2 analysis that I am not qualified to do based on  
3 this information.

4 Q. Okay. Separate and apart from this  
14:21:23 5 document -- I just want to make sure I understand  
6 your answer -- you're not able to answer the  
7 question if a validator selects a UNL that is --  
8 that overlaps less than 90 percent with other  
9 UNLs, what risk that poses, is that right?

14:21:37 10 MR. WHITE: Objection; form.

11 A. I don't have the background to answer  
12 that question.

13 Q. Okay. Do you have -- do you see the  
14 reference in Exhibit 22, at the bottom of that  
14:21:52 15 section where it says "If your chosen set of  
16 validators does not have enough overlap with  
17 others, your server may diverge from the rest of  
18 the network and you could lose money by taking  
19 action based on your server's divergent state."

14:22:07 20 Do you see that?

21 A. No.

22 Q. No? Okay.

23 A. Are -- are you referring to this?

24 Q. Yes.

14:22:11 25 A. Okay.

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14:22:11 1 Q. So Exhibit 22.

2 A. Yes.

3 Q. The third paragraph under "Validator  
4 Overlap Requirements."

14:22:15 5 A. Yes.

6 Q. And then the last sentence of that third  
7 paragraph.

8 A. A chosen set of validators.

9 Q. That's right.

14:22:27 10 A. Okay. I'm sorry, your question was?

11 Q. My question is, do you know how it is  
12 that one could lose money by taking action based  
13 on one server's divergent state?

14 MR. WHITE: Objection; form.

14:22:52 15 A. I do not have enough information to  
16 actually make that -- to explain that.

17 Q. Okay. Let's go back to your report,  
18 Exhibit 1, paragraph 48, which is on page 22.

19 A. Yes.

14:23:16 20 Q. The first sentence of that paragraph is  
21 "The features of decentralized validation and the  
22 XRP Ledger's consensus protocol enabled an  
23 increase in the speed with which it can validity  
24 transactions, and make settlement of the  
14:23:30 25 transaction faster than traditional payment



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14:23:32 1 rails."

2 What's the basis for that statement?

3 A. This is information that is based on the  
4 citation, I believe Citation Number 27 and, again,  
14:23:54 5 was part of my providing -- providing background  
6 on the XRP and XRPL.

7 Q. Do you --

8 A. Not an analysis.

9 Q. I see.

14:24:03 10 Do you know how fast transactions  
11 settled via traditional payment rails?

12 A. Depends which payment rails we consider.

13 Q. Okay. I'm trying to determine the basis  
14 for your statement that the speed of the XRP

14:24:23 15 Ledger is faster than traditional payment rails.

16 So I'd like to know, what -- what are the  
17 traditional payment rails that you're referring to  
18 here? How fast do they settle transactions?

19 MR. WHITE: Objection; form.

14:24:41 20 A. I don't have information on how many  
21 seconds or microseconds or whatever time it would  
22 take.

23 Q. Is -- is this statement, the first  
24 sentence of paragraph 48, something that you drew  
14:24:52 25 from a source that you read in preparing your

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14:24:55 1 report?

2 A. I believe so, yes. Either it's going to  
3 be based on Footnote 26 or on the difference  
4 between XRP and other cryptocurrencies, 27, which  
14:25:14 5 makes reference to the speed of transactions.

6 Q. Okay. Paragraph 49 on page 23, about  
7 four lines down, there's a sentence that says --  
8 that starts "To prevent malicious activity..."

9 Do you see that?

14:25:42 10 A. Yes.

11 Q. Okay. So my question is, does a  
12 validator on the XRP Ledger have to take any  
13 affirmative steps to create a Unique Node List?

14 MR. WHITE: Objection to

14:25:54 15 form.

16 A. I am not prepared to respond to the  
17 technical requirements of a validator and the  
18 Unique Node List.

19 Q. And, so, it's fair to say you don't know  
14:26:11 20 sitting here today?

21 MR. WHITE: Objection; form.

22 A. I don't know beyond the information  
23 that's available publicly.

24 Q. I'm sorry, what do you mean by the  
14:26:24 25 information "available publicly"?

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14:26:26 1 A. That's available based on the citations  
2 I've used earlier. It's descriptive of the  
3 process, not an analysis of the process.

4 Q. Okay. Do you see where it says, in the  
14:26:44 5 same paragraph, 49, "Each XRP Ledger validator  
6 must maintain and have approved a list of trusted  
7 servers"?

8 A. I'm not sure where you are.

9 Q. Oh, it's the same sentence that starts  
14:26:58 10 with "To prevent malicious activity..."

11 A. Yes.

12 Q. Do you know if bitcoin also has the same  
13 requirement, that nodes must have a list of  
14 trusted servers?

14:27:25 15 A. Bitcoin works through miners, as far as  
16 I understand.

17 Q. And does that process entail having a  
18 list of trusted servers?

19 A. They're competing servers.

14:27:37 20 Q. So is that a no, it does not?

21 MR. WHITE: Objection; form.

22 A. I am not sure in terms of the use of  
23 this language, but I understand that process to be  
24 a mining process as opposed to a federated  
14:27:52 25 consensus process.

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14:28:08 1 Q. Going down to paragraph 50, the first  
2 sentence, second clause, says that "the system  
3 only makes forward progress when a super-majority  
4 of the validators each node trusts agree on the  
14:28:21 5 state of the Ledger."

6 Do you see that?

7 A. Yes.

8 Q. What is this super-majority? What --  
9 what percentage must agree?

14:28:41 10 A. Based on the information that I have  
11 read, I believe it's on the order of 80 percent.

12 Q. Can 20 percent of faulty nodes on  
13 Ripple's UNL halt the XRP Ledger?

14 MR. WHITE: Objection; form.

14:29:03 15 A. Are you specifically asking about the  
16 dUNL?

17 Q. Yes. I'll repeat it, but, yes.

18 Can -- can 20 percent of faulty nodes on  
19 Ripple's dUNL halt the XRP Ledger?

14:29:15 20 MR. WHITE: Same objection.

21 A. I would need more information. I think  
22 that is unclear since there are multiple UNLs  
23 available and we don't know who actually uses the  
24 dUNL, so...

14:29:42 25 Technically, in the protocol, the

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14:29:45 1 implications of the 20 percent that you're  
2 mentioning, I cannot do an analysis on that based  
3 on where I'm sitting right now.

4 Q. When you say "in the protocol," what do  
14:29:58 5 you mean by "protocol"?

6 A. The consensus protocol. The code.

7 Q. Okay. Skipping back to paragraph 49,  
8 right after the sentence that we were just looking  
9 at that starts with "To prevent malicious  
14:30:24 10 activity," there's a sentence that says "The  
11 network is designed to rely on trusted validator  
12 parties that grow organically, while pushing out  
13 dishonest nodes."

14 Do you see that?

14:30:35 15 A. I see that.

16 Q. Okay. How does the group of trusted  
17 validators on the XRP Ledger grow organically?

18 A. Because new validators become part of  
19 the network. How do new validators become part of  
14:30:54 20 the network? Is that part of what you're asking?

21 Q. I'm asking what you meant when you wrote  
22 that trusted validator parties grow organically.

23 A. Again, I used it in the context of the  
24 information that I reviewed on the XRP Ledger.

14:31:09 25 Q. Okay. But do you have a meaning of what

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14:31:11 1 the phrase grow -- I'm confused because I don't  
2 know what the meaning of "grow organically" is.  
3 So what did you mean by "grow organically"?

4 A. That new parties -- individuals,  
14:31:23 5 universities, companies, whatever it might be --  
6 become validators in the network.

7 Q. And --

8 A. That's organically.

9 Q. How is that organic?

14:31:37 10 A. Organic as opposed to -- in the commonly  
11 used meaning of the term "organic" as opposed to  
12 sort of directed new validators. So these sort of  
13 pop out independent of Ripple, independent of some  
14 of the other validators. So organic growth of a  
14:32:03 15 network.

16 Q. And how about the concluding part,  
17 "While pushing out dishonest nodes"? How are  
18 dishonest nodes pushed out of the XRP network?

19 A. Again, this kind of goes to technical  
14:32:20 20 aspects of the operation of the ledger. I believe  
21 there was a voting process involved and I can't  
22 comment beyond that.

23 Q. Okay. So this sentence is -- is  
24 something that you obtained from reviewing from  
14:32:34 25 another source?

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14:32:36 1 A. Yeah.

2 Q. That's fair?

3 A. To -- to provide general context and  
4 overview, yes.

14:32:42 5 Q. Okay. Can you -- sorry, strike that.

6 The last sentence of paragraph -- strike  
7 that.

8 The second-to-last sentence of paragraph  
9 49 that starts with "However," do you see that?

14:33:21 10 A. Yes.

11 Q. I read the sentence to mean that one of  
12 the vulnerabilities of the XRP Ledger is that it  
13 requires an a priori agreement on common trusted  
14 nodes with the UNL, is that correct?

14:33:38 15 MR. WHITE: Objection; form.

16 A. That's what the sentence says.

17 Q. Okay. Is that "a priori agreement on  
18 common trusted nodes" a reference to a UNL?

19 A. Sorry. What is your question again?

14:34:10 20 Q. Is your reference to an "a priori  
21 agreement on trusted nodes" a reference to a UNL?

22 A. Let me reread that sentence to remind me  
23 of the intent.

24 (Pause)

14:34:50 25 A. This actually goes to a very technical

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14:34:52 1 aspect of the protocol conditions --

2 Q. Mm-hmm.

3 A. -- that I'm not prepared to discuss or  
4 analyze or interpret.

14:35:03 5 Q. Is it a technical aspect that you  
6 understand?

7 A. At a level of -- high level of  
8 understanding, yes.

9 Q. Okay. But at your high level of  
14:35:19 10 understanding, why is an a priori agreement on  
11 common trusted nodes a vulnerability of the XRP  
12 Ledger?

13 MR. WHITE: Objection; form.

14 A. I'll have to take a look at the context  
14:35:42 15 of the reference from which I pulled this  
16 information.

17 Q. And what's that reference?

18 A. I believe it was one of the references  
19 cited in 26 on XRP, XRPL.

14:35:53 20 Q. Sitting here today, do you know which of  
21 the references in 26 is the source from which you  
22 drew this sentence in paragraph 49?

23 A. Given the context of the paragraph, it's  
24 probably one of the latter ones, XRPL overview.

14:36:21 25 It's all securities so I'm going to have to go



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14:36:24 1 back to that reference.

2 Q. I'm sorry, what was the last thing you  
3 said, the last sentence?

4 A. You said 49, right? In 49 -- paragraph  
14:36:38 5 49, the sentence that you're referring to, what  
6 makes XRP Ledger attractive for speed, et cetera,  
7 is under the improved security subset on page 22.  
8 So I'll have to go back to the reference that  
9 discusses improved security to get that context  
14:36:57 10 again.

11 Q. I see.

12 And just to be clear, this whole section  
13 of improved security, this is not your expert  
14 opinion. This is information that you drew from  
14:37:10 15 sources you reviewed, is that right?

16 A. Information I drew from resources I  
17 reviewed and were used in the context of  
18 formulating the opinion on whether XRPL and XRP  
19 aren't innovation of the existing blockchains.

14:37:32 20 Q. Okay.

21 A. Blockchain. There was only one at that  
22 time.

23 Q. And to the extent the sources of  
24 information you reviewed were Ripple or Ripple  
14:37:44 25 affiliates, did you take any steps to verify the

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14:37:46 1 veracity of that information that you then  
2 included in your report?

3 MR. WHITE: Objection to  
4 form.

14:38:02 5 A. Are you referring specifically to  
6 this -- to this statement in paragraph 49?

7 Q. Let's start with that statement in  
8 paragraph 49, sure.

9 A. I did not verify it independently.

14:38:17 10 Q. Okay. Now, backing up from paragraph  
11 49, to the extent that there are any statements in  
12 your report where -- that don't represent your  
13 expert opinion and are, rather, just drawn from  
14 sources of information from Ripple or Ripple  
14:38:31 15 affiliates, did you take any steps to verify the  
16 veracity of that information before including it  
17 in your report?

18 A. Well, I didn't only look at 26. There's  
19 other references that refer to comparison of  
14:38:47 20 ledgers or statements, statements on CoinDesk and  
21 whatnot that I've referenced earlier that speak to  
22 this, but I did not specifically cite to here. To  
23 see whether those same statements are made in  
24 those same documents.

14:39:08 25 Q. Right. I'm asking more of a

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14:39:10 1 methodological question.

2 A. Oh, okay.

3 Q. So, for instance, let's use this  
4 improved security paragraph as an example. So  
14:39:16 5 from the improved security paragraph, my  
6 understanding of what you've told us is that this  
7 is not your expert opinion. This is a -- a  
8 summary or a recitation of information that you've  
9 reviewed --

14:39:26 10 A. Background.

11 Q. -- from other sources.

12 A. Yes, background information.

13 MR. WHITE: Objection; form.

14 Q. To the extent that at any point in your  
14:39:33 15 report, paragraph 49 or elsewhere, to the extent  
16 that the information that you incorporated in your  
17 report was coming straight from a Ripple source,  
18 did you take any steps to verify from an  
19 independent source that that information was true?

14:39:54 20 A. Well, as I mentioned, there are other  
21 sources that refer -- now you specifically talk  
22 about security. But those statements that came  
23 from Ripple, if these statements also were  
24 amplified elsewhere, I kept them in. If there was  
14:40:07 25 a contradiction, I may have highlighted that

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14:40:13 1 contradiction.

2 Q. Okay. So, again, I just want to get to  
3 a methodological question. One approach that you  
4 might have taken would be to just accept as true  
14:40:22 5 whatever is stated in Ripple sources. Another  
6 approach you might have taken is to not accept as  
7 true anything that was stated in Ripple sources.  
8 A third approach you might take is taking Ripple  
9 sources and, if it's a Ripple-only source for that  
14:40:35 10 information, trying to find an independent source  
11 to verify the veracity of the Ripple source.

12 Do you understand the three scenarios  
13 I'm setting out?

14 A. Sort of.

14:40:43 15 Q. Okay. Did -- did you do the third  
16 thing? If -- if you were -- for instance, with --  
17 going back to 49, when you're making a statement  
18 in your report about improved security, did you --  
19 did you search for any other independent source of  
14:40:59 20 information about improved security of the XRP  
21 Ledger independent of Ripple?

22 MR. WHITE: Objection; form.

23 A. In the context of this opinion, I was  
24 not asked to render an opinion on the security of  
14:41:11 25 the XRP Ledger. I basically took the information

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14:41:16 1 that was available and in aggregate used it in my  
2 opinion on the innovation of Ripple -- of -- of  
3 XRP and XRPL over the existing blockchain.

4 Q. I hear you, but I -- I'm not sure  
14:41:31 5 you're -- with all due respect, I'm just not sure  
6 you're answering my question. And -- and, again,  
7 I'm just asking a question as to your method.  
8 Let's keep it to paragraph 49.

9 For paragraph 49, you make a series of  
14:41:44 10 statements about improved security. I understand  
11 from what you've said that you've drawn these  
12 statements from other sources. They're not your  
13 expert opinion. Correct?

14 A. Mm-hmm.

14:41:53 15 Q. Okay. When you drew -- if you -- with  
16 respect to 49, if any of the facts in 49 come from  
17 Ripple sources, did you make any efforts to verify  
18 the veracity of those facts in 49 from sources  
19 independent of Ripple?

14:42:10 20 A. I did not.

21 Q. Okay. Were there other occasions in  
22 your report where you drew from -- strike that.

23 Were there other occasions in your  
24 report where you set out in your report facts that  
14:42:25 25 you obtained from your review of Ripple sources

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14:42:27 1 and did not take any steps to independ --  
2 independently verify the veracity of those facts?

3 A. Is your question were there other places  
4 where I did not do that?

14:42:39 5 Q. Yes, exactly.

6 A. You'd have to go to very specific  
7 places. So my -- what I was -- what I set to do  
8 is to compare what was available about Ripple,  
9 whether disclosed by Ripple or other parties,  
14:42:56 10 relative to what the incumbent technology is.

11 That was actually the -- the objective of my -- of  
12 my opinion, is to compare new versus incumbent and  
13 take whatever aggregate information that I had to  
14 actually compare these two.

14:43:13 15 Q. Okay. So from your perspective, you  
16 didn't draw a distinction between whether or not  
17 you learned information from a Ripple source or  
18 from a non-Ripple source?

19 MR. WHITE: Objection; form.

14:43:22 20 A. Not necessarily, no.

21 Q. Okay. How -- how is a reader of your  
22 report able to ascertain what portions of your  
23 report are recitations of facts drawn from other  
24 sources versus what portions of your report are  
14:43:45 25 your expert opinion?

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14:43:45 1 MR. WHITE: Objection; form.

2 A. Well, when I have citations to sources,  
3 then that is not my own original, I guess,  
4 opinion. It's just, using those sources, I have  
14:44:14 5 to come to a conclusion: How did the aggregate of  
6 these sources and of that information gained from  
7 these sources stack up against what the incumbent  
8 technology is? Which is kind of how we do,  
9 generally, a business analysis for innovative  
14:44:32 10 companies relative to companies that are already  
11 in the market.

12 Q. Right.

13 I -- I guess what I'm trying to  
14 determine is for something like -- focusing on the  
14:44:43 15 example of 49, improved -- improved security --

16 A. Mm-hmm.

17 Q. -- how can the reader of your report  
18 tell whether or not you, as an expert, are opining  
19 that the XRP Ledger constitutes a ledger with  
14:44:56 20 improved security over preexisting technology  
21 versus your adopting others' views that that's the  
22 case?

23 MR. WHITE: Objection; form.

24 A. Because the information is presented  
14:45:17 25 regarding what the incumbent technology, bitcoin,

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14:45:21 1 does or has or its speeds or its energy use or its  
2 cost relative to what we know about the XRPL.

3 Now, when I cite, for example, that it  
4 takes three to five seconds or four seconds on  
14:45:40 5 average to, you know, validate a transaction, that  
6 isn't only based on the Ripple source. If I've  
7 seen it elsewhere, then, you know, I'm comfortable  
8 with that information.

9 Q. Okay. I hear you, but I'm -- I'm still  
14:45:58 10 struggling with how is a reader of your report  
11 able to differentiate between when you, an expert  
12 retained to provide expert witness services, are  
13 expressing your expert opinion versus when you're  
14 reciting the fact -- facts or information as  
14:46:18 15 stated from other sources? Is there a way to do  
16 that reading your opinion?

17 MR. WHITE: Objection; form.

18 A. What the reader will read is how the  
19 XRPL compares to bitcoin. And that is the level  
14:46:44 20 of information that is necessary in my expert  
21 opinion as long as the information is derived from  
22 credible sources.

23 Q. And how do we know that the information  
24 is derived from credible sources without specific  
14:47:00 25 citations, say, within paragraph 49?



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14:47:03 1 MR. WHITE: Objection to  
2 form.

3 A. This paragraph 49 is really a  
4 descriptive overview of the security features. It  
14:47:22 5 is not an independent validation of the security  
6 features.

7 Q. It's not your independent expert --

8 A. It is not my --

9 (Indiscernible cross talk;  
14:47:32 10 reporter requests one speaker.)

11 THE WITNESS: Sorry.

12 Q. Shall I finish? Is that okay?

13 A. Yeah. I think you were paraphrasing me,  
14 but I don't know who was...

14:47:45 15 Q. Actually, strike that.

16 Did you have an answer you wanted to  
17 provide me? I don't want to cut you off.

18 A. I provided aggregated information that  
19 was available, whether from Ripple sources or from  
14:48:00 20 other sources, brought it together in this section  
21 where I was -- where I was asked to provide an  
22 opinion on whether XRP or XRPL was an innovation  
23 over bitcoin. And is -- or a better bitcoin.

24 And I used a number of features, looked  
14:48:24 25 at a number of features. I looked at speed. Did

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14:48:27 1 I independently verify the speed? I did not  
2 independently verify the speed. I looked at  
3 environmental -- environment -- energy use. I  
4 looked at cost. At least cost as reported. And I  
14:48:45 5 looked at the security aspects. But I did not --  
6 as being four sort of aspects that XR -- that  
7 Ripple with XRP and XRPL brought to the table.  
8 And that's how I did the comparison. But I didn't  
9 do an independent analysis of that. I just  
14:49:13 10 aggregated the information in a different way to  
11 allow us to compare between two blockchains.  
12 And some of that is done in Table 1,  
13 looking at features and attributes. It's  
14 different ways of presenting information that is  
14:49:30 15 already out there to compare. Is blockchain --  
16 from a business perspective analysis. This is not  
17 a technical analysis. It's an evaluation as a  
18 business. With the technology and products, did  
19 the company present -- was XRPL an improvement  
14:49:58 20 over existing blockchains?

21 Q. Okay. Prior to your engagement in this  
22 case, had you ever made any statement regarding  
23 the topic of decentralization as applied to the  
24 XRP Ledger?

14:50:29 25 A. No.

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14:50:29 1 Q. Okay. Prior to your engagement in this  
2 case, had you ever considered the question of  
3 whether and to what extent the XRP Ledger was  
4 decentralized?

14:50:45 5 A. No. It was more about whether  
6 blockchains were decentralized.

7 Q. Prior to your engagement in this case,  
8 had you ever compared the relative  
9 decentralization of the XRP Ledger and bitcoin?

14:50:58 10 A. Sorry, can you repeat that question?

11 Q. Sure.

12 Prior to your engagement in this case,  
13 had you ever compared the relative  
14 decentralization of the XRP Ledger and bitcoin?

14:51:09 15 A. No. And I didn't do it in my engagement  
16 either.

17 Q. Okay. Prior to your engagement in this  
18 case, had you ever compared the decentralization  
19 of the XRP Ledger to any other blockchain?

14:51:25 20 A. I had not and there was also not  
21 directly a way to do that.

22 Q. Is it your view that there's no way to  
23 compare the decentralization of the XRP Ledger to  
24 any blockchain?

14:51:45 25 A. That is my position in my rebuttal

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14:51:50 1 report.

2 Q. Prior to your engagement in this case,  
3 had you ever read any statement about the  
4 centralization or decentralization of the XRP  
14:52:06 5 Ledger?

6 A. I probably read it on websites, as in  
7 crypto websites.

8 Q. And what was it that you read?

9 A. Well, there's all sorts of discussion  
14:52:24 10 forums on CoinDesk and, you know, crypto.com sites  
11 and whatnot on decentralization. So that's sort  
12 of the level of, you know, knowledge and  
13 information that I looked at.

14 Q. Did you read any articles specific to  
14:52:41 15 the topic of the decentralization of the XRP  
16 Ledger?

17 A. Articles? Do you mean any information  
18 that is available online?

19 Q. I do.

14:52:57 20 A. I probably did, yes.

21 Q. And what was -- what was the -- strike  
22 that.

23 Did the articles that you read take the  
24 position that the XRP Ledger was or was not  
14:53:10 25 decentralized?

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14:53:13 1 A. Before this case, at that time I wasn't  
2 looking at this from that perspective. I was  
3 looking from the perspective of being on the  
4 advisory board of a fund and having to evaluate a  
14:53:23 5 bunch of different FinTech companies and looking  
6 at, you know, what do we know about FinTech  
7 companies, the blockchains they operate on. You  
8 know, what's being said about centralization and  
9 decentralization. More at that level, not  
14:53:38 10 specific to XRP or specific to...

11 So I didn't really take a position.

12 Q. Prior to your engagement in this case,  
13 were you aware of any statements by Ripple about  
14 the centralization or decentralization of the XRP  
14:53:56 15 Ledger?

16 A. Prior to the case?

17 Q. Prior to your engagement in this case.

18 A. I didn't follow that level of detail,  
19 no.

14:54:26 20 Q. Let's go to your rebuttal report,  
21 Exhibit 2, please. Going to paragraph 36, which  
22 is on page 20 and 21. And I'm looking just at the  
23 last sentence of paragraph 36, which says "Each of  
24 these features of the XRP Ledger offer  
14:55:18 25 incentives - for example, to payment processors

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14:55:20 1 who want to ensure their transactions clear more  
2 quickly and cheaply than on the bitcoin or  
3 Ethereum blockchains and therefore have an  
4 incentive to ensure the XRP Ledger continues to  
14:55:28 5 exist."

6 Do you see that?

7 A. I see that.

8 Q. Is this sentence an example of  
9 information that you sourced from elsewhere or is  
14:55:35 10 this your expert opinion?

11 MR. WHITE: Objection; form.

12 A. So we have to go back to the purpose of  
13 the rebuttal report, in which case I wear my  
14 academic hat because this is a discussion in the  
14:56:07 15 scientific literature as to what the meaning of  
16 decentralization -- what the definition is, how  
17 you measure it, or what the metrics are that would  
18 describe it. How you measure it. How -- what the  
19 purpose is or what the role is of incentives,  
14:56:30 20 whether incentives need to be economic incentives  
21 or not economic incentives.

22 And I read all the papers that I  
23 sourced, all the papers that are cited on that and  
24 understood from, I believe in this case, the --  
14:56:45 25 starting with the -- was that the side paper?

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14:56:50 1 Let's see. I'll have to reread this paragraph, by  
2 the way.

3 Even when you look at the Troncoso  
4 papers, some of the other papers for discussion,  
14:57:30 5 there was discussion around -- this was specific  
6 around incentives, right. This paragraph that  
7 you're referring to is a paragraph around  
8 incentives. And my opinion on Dr. [REDACTED]  
9 report as to whether these incentives and protocol  
14:57:52 10 incentives are necessary to build a successful  
11 decentralized system.

12 So I set out to test that assertion by  
13 reading papers in the academic literature. And  
14 based on these papers in the academic literature  
14:58:07 15 that say it doesn't have to be one in protocol  
16 incentive and it doesn't necessarily need to be an  
17 economic incentive. The -- so that's a big part  
18 that led into this sentence.

19 Second, practically, I'm advisor to a  
14:58:27 20 blockchain company called Blockchain Triangle that  
21 operates on a -- on a blockchain. And working  
22 with them, the question is, also, do participants  
23 need to be economically incentivized, as I said?  
24 Now it's all about risk management. So they want  
14:58:43 25 to keep a blockchain live for risk management or

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14:58:50 1 reputational reasons.

2           The University of Michigan, as I  
3 mentioned to you earlier, we actively -- we do not  
4 actively run a node. We're not paid to run a  
14:59:01 5 node. We're not compensated to run a node. We're  
6 actually not running it. But the research that is  
7 happening on the XRP and XRPL might incentivize  
8 some of the researchers that are working in the  
9 space to actually fund and be active on the  
14:59:18 10 operations of the validator node. So that's what  
11 I'm saying. It doesn't have to be a strictly  
12 protocol economic incentive.

13           Q. Do you -- sorry, go ahead.

14           A. Yeah. Sorry.

14:59:32 15           Q. You said the University of Michigan is  
16 no longer running a node on the XRP Ledger, is  
17 that right?

18           A. We maintain the node. We do not  
19 actively participate in the validation process.

14:59:45 20           Q. I see.

21                   And that's true today?

22           A. That is true today.

23           Q. Okay. I want to focus you back on the  
24 last sentence of paragraph 36.

14:59:55 25           A. Mm-hmm.



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14:59:55 1 Q. Do you know whether payment processors  
2 clear transactions on the XRP Ledger?

3 A. I think you'll have to be more specific  
4 as in which payment processor.

15:00:17 5 Q. Well, that's actually my question to  
6 you, Professor. So I'm trying to find the basis  
7 for this assertion that "for example, to payment  
8 processors who want to ensure their transactions  
9 clear more quickly and cheaply than on the bitcoin  
15:00:31 10 or Ethereum blockchains."

11 What payment processors are you  
12 referring to in your rebuttal report?

13 A. It's more of a general statement here.

14 Q. What's the basis for -- I'm sorry. Go  
15:00:45 15 ahead.

16 A. I was done.

17 Q. Oh, okay.

18 What's the basis for the statement that  
19 "payment processors who want to ensure their  
15:00:57 20 transactions clear more quickly and cheaply than  
21 on bitcoin or Ethereum" have an incentive to use  
22 the XRP Ledger?

23 A. I believe it's in the context of the  
24 fact that they need XRP to clear their  
15:01:44 25 transactions.

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15:01:46 1 Q. Okay. But how do you know that?

2 A. Based on some of the examples that I  
3 looked at at -- at the end of my first report.

4 Q. If you look at the paragraph 36 of your  
15:02:00 5 rebuttal report, you can see there's -- there's  
6 not a footnote to that sentence and -- and that's  
7 why I'm inquiring.

8 What's -- what's the source of that  
9 information?

15:02:38 10 A. You're right, there is no source cited  
11 here and that's sloppy. I didn't refer back to my  
12 first report where I identified some of the use  
13 cases, some of whom were payment processors.

14 Q. I see.

15:02:58 15 A. And I did not carry that over.

16 Q. And which -- which payment processors  
17 from your first report are you referring back to  
18 at the end of paragraph 36 of your rebuttal  
19 report?

15:03:13 20 A. I did not refer back to a specific  
21 payment processor, but just payment processor as  
22 an exemplar on a use case.

23 Q. I see.

24 Do you know whether payment processors  
15:03:22 25 use the -- the XRP Ledger to clear their

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15:03:23 1 transactions today?

2 A. If they accept XRP?

3 Q. Okay. But do you -- I'm sorry, maybe --

4 A. Are you looking for names or --

15:03:51 5 Q. Yeah. Let's just start with yes or no.

6 Do you know whether payment processors

7 use the Ledger, the XRP Ledger, to clear their

8 transactions today?

9 A. I'm going to have to check into that.

15:04:05 10 Q. Okay. So that means you're not sure one

11 way or the other sitting here today?

12 A. I'm clearly not certain --

13 Q. Okay.

14 A. -- whether they use the XRP or the XRPL,

15:04:16 15 yeah.

16 Q. Can we look at Exhibit 3, please?

17 (Whereupon, exhibit is

18 received and marked SEC Adriaens

19 Exhibit 3 for identification.)

15:04:32 20 MR. SYLVESTER: Thank you

21 very much.

22 BY MR. SYLVESTER:

23 Q. Exhibit 3, Professor, is Dr. [REDACTED]

24 report dated October 4th, 2021. And my question

15:04:48 25 for you is going to be on page 26 of his report.

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15:04:54 1 A. Page 26?

2 Q. Yes.

3 On page 26, do you see that Figure 1,

4 which is entitled "Ripple validators and

15:05:12 5 validators operated by entities funded by Ripple,

6 given as a fraction of the dUNL membership over

7 time"?

8 A. I see that.

9 Q. I believe you -- you did not comment on

15:05:26 10 this figure in your rebuttal report, is that

11 correct?

12 A. I would have to check.

13 (Pause)

14 A. I finally found the link here. Sorry.

15:07:17 15 I believe I did not specifically cite

16 Figure 1 in my rebuttal report.

17 Q. Okay. And sitting here today, do you

18 have any reason to dispute the data that's

19 displayed in Figure 1?

15:07:28 20 MR. WHITE: Objection; form.

21 A. I have not verified these data, so I

22 wouldn't know.

23 Q. Right. I'm not asking you to

24 affirmatively agree with the data. I'm asking if

15:07:46 25 you have any reason to dispute the data displayed

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15:07:48 1 in Figure 1.

2 MR. WHITE: Objection; asked  
3 and answered.

4 A. I don't really have the technical  
15:07:58 5 background to assess whether or not this is  
6 correct or not.

7 Q. Okay. If -- let me pose a hypothetical  
8 then.

9 Let's say there was a period where  
15:08:14 10 Ripple controlled 100 percent of the validators  
11 that were on Ripple's UNL.

12 Did Ripple then, as a practical matter,  
13 control the validation of the transactions on the  
14 XRP Ledger?

15:08:24 15 MR. WHITE: Objection; form.

16 A. It's a hypothetical, of course, so one  
17 would have to speculate.

18 Q. You're permitted to speculate.

19 A. Under those conditions and not knowing  
15:08:45 20 anything else, they would control -- what was the  
21 question again? Do they --

22 Q. I -- sorry. Go ahead. Did you want me  
23 to reask it?

24 A. Oh, yeah, if you could reask it.

15:09:03 25 Q. Of course.

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15:09:03 1 The hypothetical is, let's say there was  
2 a period where Ripple controlled 100 percent of  
3 the validators that were on Ripple's UNL.

4 Did Ripple, then, as a practical matter,  
15:09:11 5 control the validation of the transactions on the  
6 XRP Ledger?

7 A. I don't know what the meaning of  
8 "control" is in this hypothetical and how that  
9 would be impacted by the protocol, the validation  
15:09:29 10 protocol, so it would be hard for me to give a  
11 yes-or-no answer to that.

12 Q. Let's assume that the XRP Ledger for  
13 this hypothetical works the way it works as you  
14 described earlier, that it's 80 percent majority  
15:09:46 15 voting.

16 A. Mm-hmm.

17 Q. And Ripple controls 100 percent of the  
18 validators.

19 So under those circumstances, does  
15:09:53 20 Ripple, as a practical matter, control the  
21 validation of transactions on the XRP Ledger?

22 MR. WHITE: Objection; form,  
23 calls for speculation.

24 A. Do you also assume -- I mean, what are  
15:10:05 25 the other assumptions in that? Are there other

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15:10:08 1 UNLs?

2 Q. Let's say that's the UNL that the nodes  
3 are -- have selected as the UNL they use.

4 MR. WHITE: Objection.

15:10:25 5 A. So you're assuming there's only one UNL  
6 and Ripple controls 100 percent of all the  
7 validators in the UNL?

8 Q. That's exactly right.

9 A. As a hypothetical.

15:10:35 10 Q. That's -- that's correct. That's my  
11 hypo.

12 Under those circumstances, does Ripple,  
13 as a practical matter, control the validation of  
14 transactions on the XRP Ledger?

15:10:43 15 MR. WHITE: Objection to  
16 form; calls for speculation.

17 A. Of course my answer would be  
18 speculative, but it would appear yes, while  
19 knowing that that is not the case.

15:11:02 20 Q. What do you mean, "while knowing that is  
21 not the case"?

22 A. You're referring to 100 percent control  
23 and there being only one UNL.

24 Q. Those are the terms of my hypothetical,  
15:11:12 25 that's right.

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15:11:14 1 A. Those are the terms of your  
2 hypothetical. Okay.  
3 Q. Let's go to your original report again.  
4 Let's start with Appendix C.  
15:11:57 5 MR. WHITE: If we're moving,  
6 going to a new topic, would now be a  
7 good time for a break?  
8 MR. SYLVESTER: Sure. That's  
9 fine.  
15:12:03 10 MR. WHITE: All right.  
11 THE VIDEOGRAPHER: Off the  
12 record. The time is 3:13.  
13 (Whereupon, a recess is taken.)  
14 THE VIDEOGRAPHER: We'll go  
15:36:43 15 back on the record. The time is 3:38.  
16 BY MR. SYLVESTER:  
17 Q. Professor, let's turn to page 8 of your  
18 expert report, Exhibit 1.  
19 A. Page 8?  
15:37:02 20 Q. Yes.  
21 A. Okay.  
22 Q. Paragraph 19 where it says "Opinion 1."  
23 Do you see that?  
24 A. Yes.  
15:37:07 25 Q. And your opinion here is "The XRP Ledger

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15:37:10 1 and its native currency, XRP, represented an  
2 important innovation in blockchain technology."

3 Do you see that?

4 A. Yes.

15:37:17 5 Q. Before the break we were talking about  
6 various aspects of the XRP Ledger as to which you  
7 gathered information from sources --

8 A. Mm-hmm.

9 Q. -- such as speed, cost, environmental  
15:37:32 10 impact, security.

11 Do you recall that conversation?

12 A. Yes, I do.

13 Q. Okay. My question is, are those the  
14 factors that you considered when you concluded for  
15:37:43 15 your Opinion 1 that the XRP Ledger in its nature  
16 currency, XRP, represented an important innovation  
17 in blockchain technology?

18 A. These were factors I considered, yes.

19 Q. Okay. And as to -- strike that.

15:38:05 20 As to those factors -- the speed of the  
21 Ledger, the cost of transactions, the  
22 environmental impact of the Ledger and the  
23 relative -- the security of the Ledger, of the XRP  
24 Ledger, versus other blockchains -- those are all  
15:38:17 25 topics on which you don't have your own

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15:38:22 1 independent expert opinion but, rather, read the  
2 sources cited in your report and have recited what  
3 you read, is that right?

4 MR. WHITE: Objection; form.

15:38:34 5 A. Yes. I aggregated information that was  
6 available on the XRPL, yeah.

7 Q. As to any of those factors -- speed,  
8 cost, environmental impact, security of the XRP  
9 Ledger -- was there ever any dispute in the  
15:38:50 10 sources that you reviewed? For instance, was  
11 there any article that said, well, actually, the  
12 XRP Ledger is less secure than bitcoin?

13 MR. WHITE: Objection; form.

14 A. Oh, okay. Was there any -- sorry, what  
15:39:07 15 was the question?

16 Q. Was there any dispute among the sources  
17 as to any of these factors? And my example was --  
18 was, did you ever look at a source that said,  
19 well, the XRP Ledger is actually less secure than  
15:39:18 20 bitcoin?

21 MR. WHITE: Objection; form.

22 A. Specifically on security, I believe  
23 there is the paper of Chase and MacBrough,  
24 nonpeer-reviewed paper, I believe, that refers to  
15:39:36 25 that. But, again, I did not do an independent

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15:39:39 1 analysis as to which assertion was the correct  
2 assertion. When I look at important innovations,  
3 we look at a new product that comes in the market,  
4 in what extent and in what characteristics is it  
15:39:57 5 superior to existing products.

6 So from a -- a VC/business analyst, you  
7 very often look at a -- sort of a commonly used,  
8 how should I say, metric in discussions among  
9 venture capitalists is, oh, can we achieve a 5 or  
15:40:14 10 a 10x improvement?

11 I do not cite a 5 or 10x. It's just  
12 sort of a common way of looking at this. Is it  
13 five times faster? ten times faster? Order of  
14 magnitude is always an important sort of metric in  
15:40:28 15 the business community, in the venture community,  
16 and I looked at it more from that perspective.

17 Of course on securities, we can't talk  
18 about order of magnitude. It's not a -- can't be  
19 metricized. In fact, it can't even -- can't even  
15:40:40 20 be well measured.

21 And, so, yes, I was aware of Chase and  
22 MacBrough paper.

23 Q. And the Chase MacBrough paper expresses  
24 the opinion that the XRP Ledger is actually less  
15:40:54 25 secure than bitcoin, is that right?

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15:40:57 1 A. To my recollection -- and, again, I'm  
2 not a technical expert in analyzing security  
3 issues on blockchains -- it was that there are  
4 conditions under which there might be problems  
15:41:12 5 with the server -- with the -- with the  
6 blockchain. Sorry.

7 Q. So in -- in reaching the conclusion  
8 within your paragraph 49 that the XRP Ledger  
9 represented improved security, how was it that you  
15:41:28 10 chose to disregard the concerns set forth in the  
11 Chase MacBrough paper?

12 MR. WHITE: Objection; form.

13 A. Well, at the time when the XRP Ledger  
14 was introduced in the market, there was only  
15:41:49 15 bitcoin and there had been some issues with  
16 exchanges, with an exchange Mt. Gox, I believe, or  
17 around that time. There had been issues with 51  
18 percent of tax. And the argument was, at least in  
19 some of the readings that I did, that the  
15:42:06 20 federated consensus mechanism that Ripple  
21 deployed -- that -- sorry, that XRP uses is less,  
22 I guess, vulnerable to that type of attack. And I  
23 used that.

24 And the other one, Chase and MacBrough  
15:42:36 25 paper, I used a little more as context to know

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15:42:44 1 about it.

2 THE REPORTER: I used the?

3 THE WITNESS: Sorry.

4 A. The Chase and MacBrough paper, I used  
15:42:44 5 that more as background to know about the  
6 concerns.

7 I, actually, want to go back to the  
8 discussion we had before our break. One of the  
9 lines that you asked, where you asked me what's  
15:42:54 10 the citation to that regarding the a priori  
11 agreements --

12 Q. Mm-hmm.

13 A. -- in the security, I did not  
14 double-check it, but thinking about it, that might  
15:43:07 15 have been the Chase and MacBrough or related to  
16 that paper.

17 Q. Okay.

18 A. So I did take it into account in my  
19 considerations.

15:43:17 20 Q. And -- and how -- do I understand  
21 correctly that the Chase MacBrough paper outlined  
22 weaknesses in security of the XRP Ledger?

23 MR. WHITE: Objection to  
24 form.

15:43:34 25 A. Again, I'm not a -- it's a very highly

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15:43:36 1 technical paper and I -- I do not have that level  
2 of technical background to do that kind of  
3 analysis. But reading the conclusions of that  
4 paper, they argued that under certain conditions,

15:43:45 5 there might be security issues or problems with  
6 the Ledger. But I cannot independently verify  
7 that, so I decided to look at what most sites and  
8 most reports around the XRPL we're talking about,  
9 which was that it did appear to not have that

15:44:06 10 vulnerability, that 51 percent tax as sort of an  
11 added security as a different consensus metric.  
12 Different consensus method.

13 But, again, we have to look at not each  
14 of them separately. It's really the aggregate.

15:44:24 15 Again, when we discuss where the innovations are,  
16 we write reports where innovations are with new  
17 companies, digital companies, FinTech or  
18 otherwise. We discuss what is -- what the current  
19 baseline is in the market and what these new  
15:44:40 20 companies are capable of achieving relative to  
21 that and, therefore, what their potential market  
22 opportunity is.

23 And I looked at a subset of features  
24 that have come up in these discussions like the  
15:44:53 25 ones you just iterated.

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15:44:54 1 Q. Was your -- was the Chase MacBrough  
2 paper part of that baseline of the market views on  
3 how secure the XRP Ledger was vis-a-vis other  
4 blockchains?

15:45:10 5 A. Well, the Chase and MacBrough, I forgot  
6 where that is published -- was published. I'm  
7 going to have to look that up relative to the  
8 innovation that existed at the time when the XRP  
9 Ledger was introduced to the market. So probably  
15:45:25 10 I did not take it explicitly into consideration.  
11 As I said, it isn't just about security. It's  
12 about all -- the aggregate of all of these  
13 benefits.

14 Q. Setting aside the Chase MacBrough paper,  
15:45:38 15 were there other instances where a source that you  
16 read expressed the view that on any of the factors  
17 you listed -- speed, cost, environmental impact or  
18 security -- the XRP Ledger was actually inferior  
19 to other blockchains?

15:46:06 20 A. You mean on speed, cost, and energy  
21 benefits? It was inferior to other blockchains?

22 Q. Yes.

23 A. I have not come across a reference that  
24 would state that.

15:46:17 25 Q. How did you select the sources that you

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15:46:19 1 reviewed to inform your views about what the  
2 market opinion was about the speed, cost,  
3 environmental impact, or security of the XRP  
4 Ledger?

15:46:35 5 A. Keyword searches. Use cases I looked at  
6 that selected the XRP or XRPL, for example,  
7 because of their environmental -- its  
8 environmental benefits or costs. So we have -- I  
9 mean, there were -- it's not academic literature.

15:46:58 10 In that case it is information that is out there  
11 in the cryptosphere. And overwhelmingly what I  
12 came across were these benefits.

13 Q. When you say "keyword searches," do you  
14 mean Google searches?

15:47:13 15 A. Yes, among others. Google searches,  
16 Ripple reports, Insights, crypto.com. You know,  
17 those types of websites that evaluate and look at  
18 cryptocurrencies and blockchains. CoinDesk,  
19 Medium.

15:47:34 20 Q. Did you make any attempt to seek out  
21 sources on these topics that might have been  
22 skeptical of Ripple or XRP Ledger?

23 MR. WHITE: Objection to  
24 form.

15:47:49 25 A. I would have assumed that negative



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15:47:53 1 reports would have come out with the same  
2 searches.

3 Q. With the keyword searches?

4 A. Yes.

15:47:59 5 Q. Okay. Understood.

6 But just to make sure I understand the  
7 answer to my question, did you -- did you take any  
8 affirmative steps to try to seek out sources that  
9 might have been skeptical about these features  
10 about the XRP Ledger?

11 MR. WHITE: Objection; form.

12 A. I wouldn't know how to go about doing  
13 that. When I look at sources that say how this  
14 XRPL compared to other blockchains -- I mean, in  
15:48:24 15 this case, it would have been just bitcoin, right,  
16 because that was the only one that was antecedent.

17 There was nothing that came -- that came  
18 up, I guess, that would refer to that negative  
19 effect.

15:48:41 20 Q. Okay. Let's go to your Appendix C,  
21 please.

22 Professor, do you know who created this  
23 list that appears as Appendix C?

24 A. It was -- I requested the lists, as I  
15:49:13 25 mentioned earlier, that was referred to in the

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15:49:16 1 Wells report that I referred earlier. I had  
2 information myself of radio news cases and I  
3 requested from counsel whether there is a list,  
4 either the list that was referred to in the Wells  
15:49:31 5 report or otherwise, available for me to take a  
6 look at.

7 Q. Okay. But do you know who -- who  
8 actually drafted this list?

9 A. No.

15:49:46 10 Q. Column 2 on the list says "Category."  
11 Do you see that?

12 A. Yes.

13 Q. Is that the category of company that's  
14 listed under the "Entity Name" column?

15:50:00 15 A. Yes. Sometimes we call category primary  
16 use case. That's how I refer to it in -- in -- in  
17 my report. It's sort of the industry or the use  
18 case that gets that.

19 Q. That -- that was my question about  
15:50:15 20 actually the distinction between the category of  
21 company and the use case. And why this brings to  
22 mind is on the very top of the second page of  
23 Appendix C --

24 A. Mm-hmm.

15:50:27 25 Q. -- I'm sorry, I don't know how to

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15:50:28 1 pronounce the name. It looks like Beliani.

2 Do you see that?

3 A. I'm sorry, where?

4 Q. The very top of the second page of

15:50:37 5 Appendix C.

6 A. Beliani, yeah.

7 Q. Okay. And do you see how the category  
8 listed is "Furniture"?

9 A. Yes.

15:50:46 10 Q. So, clearly, I think we can agree that  
11 XRP can't be used as furniture?

12 MR. WHITE: Objection; form.

13 A. Of course not.

14 Q. The Ledger can't be used as furniture?

15:50:54 15 A. No.

16 Q. Okay. So --

17 A. It's the market. It's -- essentially  
18 the category is the market. What is the market  
19 you're trying to attract, that the use case tries  
15:51:05 20 to address?

21 Q. Okay. So I -- what should I take from  
22 the designation of furniture for the Beliani  
23 entry?

24 A. Purchasing. It's an e-commerce company,  
15:51:19 25 I believe. I haven't looked at this one recently,

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15:51:21 1 but what -- what I would take away -- I'm going to  
2 have to look at it again -- is that one could  
3 purchase furniture with XRP in the context of this  
4 use case.

15:51:34 5 Q. Okay. And is it -- is that connection  
6 that you just made, that one could purchase  
7 furniture from Beliani using XRP, is that set out  
8 anywhere in your report?

9 A. No, that is based on going on to the  
15:51:56 10 website of those -- of that company.

11 Q. Okay. I have one question about the  
12 relationship between Appendix C and Appendix D.

13 A. Yes.

14 Q. So if you look at Appendix D, there's a  
15:52:13 15 second column that's unlabeled.

16 Do you see that?

17 A. Yes.

18 Q. It just starts with "uConektPAY," the  
19 first entry.

15:52:21 20 Is that second column in Appendix D a  
21 copy of the category listed in Appendix C?

22 A. That would be the category or the -- the  
23 market, yeah.

24 Q. Okay.

15:52:30 25 A. Yeah.

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15:52:30 1 Q. But I guess what I'm trying to say is  
2 did -- did you copy over the category listed in  
3 Appendix C into the second column of Appendix D?

4 A. I believe so, but I first did go to the  
15:52:54 5 website of that company to see whether they were  
6 actually in that industry or in that category.

7 Q. Okay. Going back to Appendix C -- and  
8 we'll get to your work that Appendix D represents,  
9 but I just want to focus on C.

15:53:21 10 In order for a company to be included on  
11 this list of use cases, does there have to be a  
12 use for XRP or the XRP Ledger that actually exists  
13 in the world or is it possible that some of these  
14 use cases are theoretical or in development?

15:53:39 15 A. For this list?

16 Q. For Appendix C.

17 A. I went in with the assumption when I  
18 initially received it that they were use cases,  
19 either current or may have had or -- or  
15:53:56 20 potentially they're exchanges; had XRP -- use of  
21 XRP or XRPL. But my analysis was done then on  
22 analyzing these use cases.

23 Q. Okay.

24 A. Assuming this to be true, then let's go  
15:54:12 25 validate and verify that in my own analysis.

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15:54:18 1 Q. Did counsel ask you to assume that this  
2 list of use cases in Appendix C was a list of  
3 genuine use cases for XRP or the XRP Ledger?

4 A. They didn't have me assume anything.

15:54:34 5 Q. Okay. When you say "I went in with the  
6 assumption when I initially received it that they  
7 were use cases, current or potentially if they're  
8 exchanges," that was just an assumption you  
9 generated on your own?

15:54:45 10 A. A starting -- that's right. Starting  
11 assumption. Starting hypothesis I was going to be  
12 testing, yes.

13 Q. Okay. And then some subset of Appendix  
14 C is also listed in Appendix D, is that right?

15:55:01 15 A. Sorry, a subset of?

16 Q. Of C.

17 A. Is in D.

18 Q. Okay.

19 A. Yes.

15:55:08 20 Q. So if we just focus on the Appendix C  
21 and we carve out anything that's listed on  
22 Appendix D, did you take any steps to verify  
23 whether those use cases that appear only on  
24 Appendix C actually were genuine use cases for XRP  
15:55:27 25 or the XRP Ledger?

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15:55:34 1 A. So your question is, did I look at the  
2 use cases that remained after I extracted Appendix  
3 D from Appendix C?

4 Q. Right. I think I understood your  
15:55:44 5 testimony earlier to be that you took a number of  
6 steps to --

7 A. Yes.

8 Q. -- examine the use cases with respect to  
9 D.

15:55:50 10 A. Mm-hmm.

11 Q. So I'm saying if you take out the -- the  
12 companies listed on D from C, did you do any  
13 independent analysis of the remaining companies on  
14 C?

15:56:02 15 A. I did not.

16 Q. Okay.

17 A. Which meant that either -- that they  
18 could still -- that they could also be use cases  
19 that were nonequity investment use cases.

15:56:18 20 Q. Sure. You just don't know one way or --  
21 sorry.

22 A. Yes.

23 Q. You just don't know one way or the other  
24 because you didn't look into it, is that right?

15:56:25 25 A. I didn't validate or verify each of the

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15:56:28 1 companies with respect to the use, XRP or XRPL.

2 Q. Okay. Let's turn to paragraph 124 of  
3 your Exhibit 1. That's page 64.

4 A. Sorry, where are we looking?

15:56:59 5 Q. Page 64 of your opening report.

6 A. Yes.

7 Q. Okay. So in paragraph 124, the first  
8 bullet, the last sentence, you say "I rely on  
9 Crunchbase because it is a leading firm that, in  
10 my experience as an expert in this space, is a  
11 reliable source of information regarding whether  
12 particularly innovative firms received equity  
13 funding."

14 A. Right.

15:57:26 15 Q. Do you see that?

16 A. Yes.

17 Q. Okay. Is it a generally accepted view  
18 in your field that Crunchbase is a reliable source  
19 of information regarding whether particularly  
20 innovative firms received equity funding?

21 MR. WHITE: Objection; form.

22 A. Crunchbase is a reliable database to  
23 find equity funding on companies and the implicit  
24 assumption for equity financing of companies is  
15:58:02 25 that they're reviewed and, sort of, verified in



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15:58:07 1 the market to have innovative value propositions.  
2 So that's why I conflated these two concepts.

3 Crunchbase probably doesn't say  
4 particularly innovative firms receive equity  
15:58:19 5 funding, define that here. They probably don't  
6 say it like that. This is my own wording.

7 Q. In your last answer when you say you  
8 conflated the two concepts, you mean you conflated  
9 the concepts of particularly innovative firms with  
15:58:31 10 firms that received equity funding?

11 A. Right. So companies that receive equity  
12 funding often are viewed as being companies with  
13 substantial growth potential and market traction  
14 in the industry or in the markets that they're  
15:58:46 15 trying to address.

16 Q. Okay. So let's move on to the second  
17 bullet.

18 So will you walk me through, again, what  
19 steps exactly you took with respect to any dates  
15:58:59 20 to arrive at the subset of companies on Appendix  
21 C?

22 A. Right. So, again, going back over Step  
23 Number 1, having been given a list of 660, I --  
24 and not having had the time to look at each of the  
15:59:16 25 660 separately, I said let's look at those that

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15:59:20 1 are considered by the industry with sort of a  
2 market validation of equity financing. So at  
3 least I have a subset of those.

4 So then I looked at that subset. And I  
15:59:34 5 said, okay, now the question is, did that subset  
6 of growth companies with at least market indices  
7 that they are growth companies, what -- did they  
8 have access or when would they have access to XRP  
9 or XRPL? And they couldn't have had access to XRP  
15:59:56 10 or XRPL -- XRPL until after 2013, roughly.

11 And that's why I used the founding date  
12 of Ripple as a cutoff. I said, okay, let's look  
13 first at all the companies founded after 20 --  
14 2013 and having received equity financing.

16:00:21 15 Because in those equity comp -- those  
16 equity-financed companies had access to -- or let  
17 me -- at that time XRP and XRPL were in the  
18 market.

19 The second step, then, was -- because  
16:00:38 20 that filters out a subset of companies. Actually  
21 filters out -- let's see. 153 companies were  
22 founded after -- so 153 companies were founded  
23 after Ripple, Ripple's incorporation. I guess  
24 they used 2012, not 2013. Of those founded after  
16:00:58 25 Ripple's incorporation, instead of 91 use cases,

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16:01:02 1 it's actually 83. I think that was the other  
2 modification we talked about this morning. It's  
3 83 use cases had equity investment data of those  
4 companies founded after 2012.

16:01:16 5 Then I looked at all the remaining  
6 companies that had equity financing that were  
7 older than Ripple, incorporated before Ripple, but  
8 where the equity financing didn't happen until  
9 after the founding date of Ripple. So only --  
16:01:33 10 that's -- and that's about eight companies.

11 So basically now we have 83 plus 8 is 91  
12 use cases. 91 use cases are 83 companies with  
13 equity -- that were founded after Ripple's  
14 founding and received equity financing, and the  
16:01:52 15 additional eight are companies founded before  
16 Ripple that received equity financing after  
17 Ripple's founding.

18 And that's the total -- the list  
19 total -- that's the methodology I applied and  
16:02:05 20 that's the list that is in Appendix D.

21 Q. Okay. I think I followed that.

22 Whenever you used the phrase "equity  
23 funding" in that answer, you're referring to your  
24 use of Crunchbase to see which companies received  
16:02:22 25 equity funding, that's correct?

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16:02:24 1 A. That's correct, yes.

2 Q. Okay. Did you -- as to any of the 91  
3 companies, did you make any attempt to ascertain  
4 whether or not the equity funding the companies  
16:02:42 5 received had anything to do with the company's  
6 engagement with XRP or the XRP Ledger?

7 A. No, that was not material to my  
8 analysis. I wanted to find high-growth companies  
9 that are after 2012, of being the cutoff date,  
16:03:08 10 using either XRP or XRPL. But it is not material  
11 whether they got the financing because of XRP or  
12 XRPL. What I want to find is fast-growing  
13 companies in the market that are using XRP or  
14 XRPL, which even by itself is a validation of XRP  
16:03:28 15 and XRPL as a useful currency in the market and  
16 technology in the market.

17 Q. So in your view, it would not be more  
18 persuasive to demonstrate that the company  
19 received funding because of some use of XRP or the  
16:03:48 20 XRP Ledger?

21 MR. WHITE: Objection; form.

22 No question. Mischaracterizes  
23 testimony.

24 A. It -- it is impossible to ascertain that  
16:04:02 25 relationship or correlation, but also was not

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16:04:05 1 material to my analysis. So my analysis was, can  
2 you identify high-growth companies or companies  
3 that are viewed to be high growth with a market  
4 presence in different industry sectors that use  
16:04:20 5 XRP or XRPL?

6 And the fact that they continued to get  
7 equity funding after the founding of Ripple and,  
8 therefore, and the availability of XRP and XRPL in  
9 the market, is an indicator of broad market  
16:04:40 10 adoption.

11 Q. Okay. You said it's impossible to  
12 ascertain any relationship or correlation between  
13 the funding received by these companies and their  
14 engagement with XRP or the XRP Ledger, is that  
16:05:02 15 right?

16 A. The problem is that we would be looking  
17 at a causality which is -- yes, based on my  
18 experience, venture funds looking at equity  
19 finance companies, very difficult to ascertain.

16:05:23 20 Q. Okay. I understand you said it's very  
21 difficult, but did you try?

22 A. It was not material to my analysis.

23 Q. And so because it was not material to  
24 your analysis, you didn't take any steps to try to  
16:05:46 25 find any link between the funding and the

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16:05:48 1 company's use of XRP or the XRP Ledger, is that  
2 fair?

3 A. That's fair.

4 Q. Okay. Would you agree that if companies  
16:06:05 5 were funded prior to any engagement with XRP or  
6 the XRP Ledger, that engagement could not have  
7 been a factor in receipt of the funding?

8 A. Can you rephrase that? I'm not sure I  
9 understand.

16:06:22 10 Q. Sure.

11 Let's use a hypothetical. Let's say a  
12 company was -- received equity funding in 2014 and  
13 that company didn't have anything to do with XRP  
14 or the XRP Ledger until 2018.

16:06:36 15 I think under your rubric, that company  
16 would be included within Appendix D, is that  
17 right?

18 MR. WHITE: Objection; form.

19 A. It would -- sorry.

16:06:46 20 MR. WHITE: Go ahead.

21 A. It would be.

22 Q. Okay. And so I'm just saying in that  
23 circumstance, in that hypothetical, there's no  
24 basis to conclude that the funding in 2014 had  
16:06:56 25 anything to do with -- whatsoever with the

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16:06:58 1 company's use of XRP or XRP Ledger in 2018?

2 MR. WHITE: Objection to  
3 form.

4 A. Again, which is -- which is not material  
16:07:06 5 to my analysis. The analysis, do high-growth  
6 companies use XRP as part of -- do they leverage  
7 XRP or XRPL as part of their business model? Even  
8 if they used 15 or 20 other currencies and one of  
9 them happens to be XRP, it doesn't matter. It is  
16:07:28 10 a high-growth company and, therefore, becomes a  
11 validation of the use of XRP in the market.

12 Q. Okay. So the --

13 A. The funding time point in the --  
14 adoption time point of that company of XRP or XRPL  
16:07:42 15 are not material to this -- to this process.

16 Q. I -- I'm sorry. Go ahead.

17 A. Yes.

18 Q. I totally hear you that it's not  
19 material, but I just want to see if you agree with  
16:07:56 20 my hypothetical.

21 So the company's funded in 2014, nothing  
22 to do with the XRP Ledger or XRP until 2018. We  
23 can both agree that the funding itself had nothing  
24 to do with any connection between the company and  
16:08:10 25 XRP and the XRP Ledger?

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16:08:11 1 MR. WHITE: Objection to  
2 form.

3 A. The funding of that company had nothing  
4 to do with the XRP or XRPL Ledger.

16:08:25 5 Q. Okay.

6 A. However, that company did decide to use  
7 the XRP or XRPL Ledger and, therefore, it did  
8 become relevant.

9 Q. If you're just looking at the  
16:08:36 10 high-growth company measure, not tied to the  
11 timing of any use of XRP or the XRP Ledger, then  
12 why did you exclude the pre-2013 companies?

13 A. I did not exclude the pre-2013  
14 companies.

16:09:00 15 Q. I see. I -- I thought that was a step  
16 that we discussed. Maybe I misunderstood --

17 A. No, that was the -- that was the  
18 inaccuracy in bullet number 2.

19 Q. I see.

16:09:13 20 A. So it's the companies founded after 2013  
21 that received equity financing -- really the  
22 operational variable is, when did companies that  
23 have equity financing have access to XRP and XRPL?

24 So, basically, I looked also at  
16:09:29 25 companies that were founded before 2013 that



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16:09:33 1 received their equity finance, their growth  
2 financing, after 2013. So I have both before and  
3 after.

4 And, again, this was just -- this --  
16:09:43 5 this whole equity financing piece, this step  
6 number 1, was really just to come up with an  
7 illustrative spectrum of companies that, based on  
8 my experience in the industry, would be viewed as  
9 being a relevant subset of companies. I didn't  
16:10:02 10 look at IBM, for example. Didn't look at -- there  
11 are lots of big corporates that use blockchain and  
12 potentially use XRP. So I just used the subset --  
13 used this subset to come up with an illustrative  
14 use case -- set of use cases.

16:10:25 15 Q. This method where you observed equity  
16 financing of specific high-growth companies on  
17 Crunchbase to evaluate the use case of a digital  
18 asset, which you did in your report, have you ever  
19 employed that methodology anyplace else other than  
16:10:48 20 in your expert report in this case?

21 A. Yes. We do these on the funds as well,  
22 the Lurie Venture Fund, the Lurie  
23 Commercialization Fund. FinTech group funds which  
24 I am involved in but did not talk about in this --  
16:11:03 25 this report.

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16:11:06 1           There's always lots of applications of  
2 companies wanting to, of course, get equity  
3 financing. And one of the triaging that we do is  
4 look at what do we know about these companies?

16:11:18 5 What do we know about similar companies in this  
6 space? How are they funded? How were they  
7 financed? To sort of figure out is there a  
8 similar company like the company we're looking at  
9 on Crunchbase that is equity financed.

16:11:32 10           So, yes, we look at that as a triaging  
11 mechanism.

12           Q. That -- that makes sense to me, but I'm  
13 asking a little bit of a different question.

14           When evaluating in terms of the  
16:11:41 15 viability of a digital asset --

16           A. Mm-hmm.

17           Q. -- which it seems the -- strike that.

18           Have you ever in your -- outside of the  
19 context of the report of this case, evaluated the  
16:11:52 20 viability of a digital asset or a blockchain by  
21 observing equity investment in companies unrelated  
22 to that digital asset or to that blockchain?

23           MR. WHITE: Objection; form.

24           A. That's a specific hypothetical that I  
16:12:13 25 have not -- that specific structuring, I guess, of

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16:12:16 1 the question. I have not.

2 Q. Okay. When you -- when you composed the  
3 list that -- of 91 companies that appears in  
4 Exhibit -- Appendix D, did you take into account  
16:12:31 5 whether any of those companies received funding  
6 from Ripple?

7 A. Did I take it into account? I did for  
8 those where I had that information available.

9 Q. And are there any -- any companies on  
16:13:02 10 your list of 91 in Appendix D that did, in fact,  
11 receive funding from Ripple?

12 A. I believe there are. These are --  
13 definitely Coil is definitely one of them. I  
14 don't know if STYRA is on here. Yes, where was --  
16:13:38 15 yes, Coil is here.

16 So, actually, Crunchbase does provide  
17 information when you search who the financiers are  
18 behind each round. And so I would know that.

19 Q. Okay. Can we turn to page 9 of your  
16:14:00 20 report, Exhibit 1?

21 A. I'm sorry, page 9?

22 Q. Page 9, paragraph 21.

23 A. Oh, okay.

24 Q. Do you see where it says "Opinion 3"?

16:14:19 25 A. Yes.

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16:14:19 1 Q. Okay. So I just want to focus on the  
2 first clause of Opinion 3. "The XRP Ledger and  
3 its native currency, XRP, have commercial utility  
4 that third parties have leveraged in the creation  
16:14:33 5 or advancement of their business models."

6 Do you see that?

7 A. Yes.

8 Q. Is your work as described on Appendix  
9 D -- strike that.

16:14:43 10 Does your work encapsulated by Appendix  
11 D have any relationship to this Opinion 3 that I  
12 just read?

13 MR. WHITE: Objection; form.

14 A. Yes.

16:15:03 15 Q. Okay. Can you explain to me how the  
16 methodology that you described demonstrates that  
17 any of the companies listed in Appendix D  
18 leveraged XRP or the XRP Ledger in the creation or  
19 advancement of their business models?

16:15:22 20 A. If they use it as a payment mechanism.  
21 If they use it as a way to conduct e --  
22 e-commerce. If they list XRP in their exchange.  
23 If they -- any of the activities that any of the  
24 companies in Appendix D undertake that uses XRP or  
16:15:45 25 XRPL, in my view, leverages or uses XRP or XRPL in

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16:15:51 1 their business model.

2 Q. Okay. So if a retail online seller  
3 accepts 100 different digital assets for payment,  
4 one of them is XRP, in your view, that would be a  
16:16:07 5 good example of a business that leveraged XRP in  
6 the creation or advancement of that company's  
7 business model?

8 MR. WHITE: Objection; form.

9 A. Yes. They use it as part of their  
16:16:24 10 business. And business model is not necessarily  
11 the same as revenue model. There's a lot of  
12 discussion around that, but the business model is  
13 how they conduct their business.

14 Q. Okay. So the -- the sort of phrase --  
16:16:40 15 strike that.

16 The phrase "creation or advancement of  
17 their business models" in your Opinion 3  
18 encompasses any contact whatsoever between XRP or  
19 the XRP Ledger and the company's businesses listed  
16:16:59 20 in Appendix D.

21 Is that fair?

22 A. That's fair. And it kind of ties back  
23 to a statement that I make earlier in my report on  
24 what constitutes successful currency. And it is a  
16:17:23 25 currency that is viewed to be one that is

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16:17:25 1 broadly -- I'm going to have to check where --  
2 where that is.

3 All right. On page 26, paragraph 57.  
4 So for currencies to be useful and be successful,  
16:17:46 5 the usability and breadth of applicability of that  
6 particular cryptocurrency in any market so that  
7 people feel comfortable using it anywhere is --  
8 becomes a very important driver for the market  
9 access and the utility of that currency. And,  
16:18:03 10 therefore, if a Korean supermarket uses, in your  
11 example, 50 cryptocurrencies, one of which is XRP,  
12 then that is a validation of the currency and is  
13 a -- it's part of the business model of that  
14 Korean supermarket.

16:18:29 15 Q. Okay. Are you offering any opinion in  
16 this case about whether XRP is or is not a  
17 currency?

18 A. No, I'm not.

19 Q. Okay. The paragraph 57 that you pointed  
16:18:46 20 me to, that doesn't have any citations that I can  
21 see, at least not on page 26. I do see one at the  
22 very end on page 27.

23 Are the -- the bullets -- the first four  
24 bullets on page 26 -- value proposition, usability  
16:19:06 25 and breadth of applicability, design, and

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16:19:09 1 liquidity -- are those your expert opinion or is  
2 this a case of sort of information aggregation  
3 from other sources?

4 A. It's information aggregation from other  
16:19:22 5 sources.

6 Q. Okay.

7 A. Including -- including many of the ones  
8 that are cited on the bottom of page 27.

9 Q. Okay. Going back to the discussion we  
16:19:43 10 were just having about your Opinion 3 --

11 A. What page?

12 Q. Let's see.

13 A. Nine?

14 Q. Page 9.

16:19:55 15 If a company accepts XRP, but no one  
16 ever actually pays for anything with XRP, in your  
17 view, is that company's business model -- strike  
18 that.

19 If a company accepts XRP, but no one  
16:20:13 20 actually ever pays for anything in XRP, does XRP  
21 advance the -- have any involvement in the  
22 creation or advancement of that company's business  
23 model?

24 MR. WHITE: Objection to  
16:20:23 25 form.

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16:20:27 1 A. In the context of my analysis, if the  
2 company offers it, even if the customers don't use  
3 it, it's still -- or initially don't use it, it is  
4 still part of the business model of that company  
16:20:39 5 that offers it.

6 Q. Okay. With respect to the companies  
7 that are listed on Appendix D, did you take any  
8 steps to determine whether or not for companies  
9 that accept XRP as payment anyone actually pays  
16:20:56 10 for goods and services with XRP?

11 A. So is your question did I check the  
12 revenue, essentially, of each of these companies  
13 to see if they -- whether -- to see if there were  
14 any transactions in XRP?

16:21:22 15 Q. My question's a bit broader in that it's  
16 did you take any steps at all to determine whether  
17 or not any company listed on Appendix D as  
18 accepting XRP actually in the course of its  
19 business receives payment in XRP?

16:21:36 20 MR. WHITE: Objection; form.

21 A. Not as part of this analysis, no.

22 Q. When you say "this analysis," do you  
23 mean your expert report?

24 A. Not as part -- yes, not as part of the  
16:21:52 25 expert report.



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16:22:02 1 Q. Okay.

2 A. It also includes, say, a company that  
3 used to use XRP and, for example, no longer uses  
4 XRP because of, for example, the -- you know, the  
16:22:13 5 current litigation that's underway. It still was  
6 an XRP use case. But if a company that was equity  
7 financed but -- in 2013, let's say, went bankrupt  
8 in 2018, but during that time used XRP, it's also  
9 a use case.

16:22:37 10 Q. Okay. I think what you're saying --  
11 strike that.

12 So Appendix D is not intended to be a  
13 snapshot of the current ways XRP or the XRP Ledger  
14 are actually used in the world.

16:22:48 15 MR. WHITE: Objection. No  
16 question.

17 A. Is your question it's not a snapshot?

18 Q. That's right.

19 A. Or it is a snapshot?

16:22:58 20 Q. It's not. I'm ask -- let me ask it  
21 again.

22 A. Okay.

23 Q. Was it -- was it your intention with  
24 Appendix D to create a snapshot of the current  
16:23:07 25 ways XRP or the XRP Ledger are actually used in

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16:23:10 1 the world as of the time of your report?

2 A. As a proxy for "being used in the  
3 world," it means do these companies in Appendix D  
4 either use XRP or XRPL? It was a snapshot. Just  
16:23:26 5 that the companies offer the opportunity is not  
6 necessarily whether the users use it.

7 Q. Okay.

8 A. That's, I think, where you're making the  
9 distinction.

16:23:41 10 Q. And there was one other distinction I  
11 think you drew which is that there could be cases  
12 or maybe there -- strike that.

13 There are cases, if I understand your  
14 testimony correctly, on Appendix D, where the  
16:23:54 15 company once had some connection to XRP or the XRP  
16 Ledger but no longer does.

17 MR. WHITE: Objection. No  
18 question.

19 A. Right. But, again, it really doesn't  
16:24:07 20 change the opinion. The diversity of use cases  
21 where XRP or XRPL is being used as part of the  
22 business model of these companies, whether it's  
23 91, 90, 89, or even let's take off -- you want to  
24 take off all the ones from before 2013, 83 is  
16:24:31 25 still a substantial set of use cases.

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16:24:33 1 And I didn't -- it's, again, just  
2 illustrative of the equity financed use cases.  
3 And to your earlier point, all the other companies  
4 that are currently on the -- that are on that list  
16:24:44 5 of 660, even though I did not analyze these  
6 companies, it might very well be there's a lot of  
7 use cases on there as well.

8 And, in fact, since I submitted the  
9 report in October, just because of, you know, the  
16:25:02 10 way I follow the industry, there's at least a half  
11 dozen more use cases that I've become aware of  
12 that use XRP or XRPL.

13 So it's a constantly evolving industry  
14 with new use cases being built that cannot be  
16:25:17 15 anticipated at any given point in time. So it is  
16 a snapshot in time.

17 Q. I guess with my question I was trying to  
18 draw the distinction between a use case and a use  
19 that exists in the world at the time of your  
16:25:28 20 report.

21 So, for instance, using something you  
22 testified about, if a company once accepted XRP as  
23 payment but no longer does, that's, in your view,  
24 still a use case that's -- that's included in  
16:25:42 25 Appendix D, is that right?

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16:25:42 1 MR. WHITE: Objection; asked  
2 and answered.

3 A. Of course, that particular use case that  
4 I brought up, I think I -- I don't know where I  
16:25:54 5 included it. Maybe I didn't include it yet.

6 The change happened later. So that's --  
7 that's why I did the snapshot in time. You have  
8 to keep looking at are these companies still  
9 accepting?

16:26:08 10 But as -- as of the time, 20 --  
11 whatever, October 4th, I believe? Yes, October  
12 4th, or the last time I checked the list before we  
13 submitted the report, these companies were still  
14 using XRP or XRPL.

16:26:24 15 Some companies were acquired. I  
16 think it was -- I forgot what the names of that  
17 company now. Harbor, I believe. So Wallet was  
18 acquired by another company. And that's fine. I  
19 mean, it's -- it's part of the evolving industry  
16:26:47 20 over time. There was acquisitions. There was  
21 bankruptcies. There are different use cases that  
22 evolve and develop. And I just wanted to  
23 illustrate that using a subset of companies from  
24 the list of 660.

16:27:01 25 Q. Okay. Let's go to page 64, paragraph

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16:27:03 1 124.

2 A. Yes.

3 Q. The last bullet says "Third, I examined  
4 the applications for the remaining use cases."

16:27:16 5 What does the word "applications" mean  
6 in that sentence?

7 A. "Applications"? Seems like an odd word  
8 here.

9 Basically this is I examined all the  
16:28:07 10 remaining use cases after Step 1 and Step 2.

11 Q. Okay. Is that --

12 A. I'm not sure what -- how the word  
13 "applications" and why the word "applications" is  
14 in here.

16:28:19 15 Q. Did -- did you put the word  
16 "applications" in your report?

17 A. It may have been a carryover on one of  
18 the iterations.

19 MR. WHITE: Objection.

16:28:28 20 I'm going to instruct you not  
21 to disclose the substance of  
22 communications with counsel.

23 A. But Bullet Number 3 is clearly about the  
24 91 companies that resulted from Step 1 and Step 2.

16:28:47 25 Q. Okay. So setting aside the word

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16:28:53 1 "applications," taking the sentence in total, "I  
2 examined the applications for the remaining use  
3 cases," what -- what exactly did that entail?  
4 What steps did you take?

16:29:14 5 A. Well, I went on the website of each of  
6 these companies and I looked at, one, what kind of  
7 company it was, how they were using XRP or XRPL,  
8 and essentially what they were doing. So -- so  
9 what markets were they serving?

16:29:37 10 Q. Okay. For each of the 91 companies  
11 listed in your Appendix D, were you able to  
12 determine from your review of the company's  
13 website how the company was using XRP or XRPL?

16:29:53 14 A. In terms of availability and in terms of  
15 media statements that the company made or in terms  
16 of keyword searches between XRP, XRPL, and the  
17 name of the company, I wanted to verify whether  
18 they were still using and whether they were using  
19 and how they were using XRP or XRPL.

16:30:15 20 Q. Okay. I think I understand your answer  
21 to mean that to determine how the companies listed  
22 on Appendix D were using XRP or XRPL, you went to  
23 the company's website and then, at least on some  
24 occasions, also did Google searches.

16:30:31 25 Does that sound right?

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16:30:32 1 A. As well as media releases on these  
2 company sites, yes.

3 Q. When you say the "media releases on the  
4 company sites," you mean that company's website,  
16:30:41 5 right?

6 A. That company's websites, yes.

7 Q. Okay. Other than Google searches and  
8 review of the company's websites, did you take any  
9 other steps to examine the applications for the  
16:30:53 10 remaining use cases?

11 A. I -- other than that, no.

12 Q. Okay.

13 A. So then I developed descriptions of how  
14 these companies were using the XRP or XRPL.

16:31:03 15 Q. And when you say you "developed  
16 descriptions of how the companies were using XRP  
17 or XRPL," where are those descriptions?

18 A. They start at paragraph 126 -- no, 128.  
19 So I just illustrated a few of these companies,  
16:31:25 20 not all 91 of them, but a few of these companies,  
21 how they were using it just to illustrate the  
22 spectrum.

23 Q. It looks like, if I'm counting  
24 correctly, this is a description of six companies,  
16:31:45 25 is that right?

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16:31:48 1 A. Six companies representing 91 companies  
2 or 90 companies if you take STYRA out.

3 Q. Okay. Sorry.

4 Is there any part of your report,  
16:32:01 5 setting aside the six companies that are discussed  
6 in paragraphs 128 through 133, that describes the  
7 use of XRP or the XRP Ledger by the remaining  
8 companies on Appendix D?

9 A. No. I just illustrated a subset of  
16:32:25 10 companies in each industry.

11 Q. Okay.

12 A. In each market.

13 Q. Are there any other steps that you took  
14 with respect to your preparation of Appendix D or  
16:32:42 15 your examination of the use cases reflected in  
16 Appendix D that we have not already discussed?

17 A. I don't think so. Except for, of  
18 course, assembling all of the information on the  
19 capital invested and aggregating the information  
16:33:18 20 of what industries these 91 -- or 90 companies  
21 represented. And, again, it was just meant to be  
22 an illustrative set of use cases.

23 Q. How did you select the illustrative set  
24 of use cases in paragraphs 128 to 133?

16:34:05 25 A. Based on more -- the level of detail of



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16:34:08 1 information that I could find on that company's  
2 use of XRP or XRPL.

3 Q. Okay. So fair to say that these six  
4 companies are the companies that you were able to  
16:34:20 5 find the most detail about their use of XRP or XRP  
6 Ledger?

7 A. I think that's a mis -- that's not what  
8 I said, "the most" information. Actually, I want  
9 to double-check something here.

16:34:40 10 I believe one of the other pieces of  
11 information that I considered is the value of the  
12 company if they had their own coin and we knew  
13 something about their coin market cap or whether  
14 they were -- had large financing rounds just to  
16:35:28 15 illustrate some of the bigger companies or the  
16 companies with more -- higher financing rounds.

17 Q. Your answer reflects other factors that  
18 you took into consideration when selecting the six  
19 to highlight in paragraphs 128 to 133, is that  
16:35:45 20 right?

21 A. Yes.

22 Q. Okay. Can we look at 132, paragraph  
23 132, page 68? The last two lines on the page have  
24 a single full sentence. It says "Data443 chose to  
16:36:09 25 work with Ripple's technology because the XRP

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16:36:12 1 Ledger is enterprise-focused with a level of  
2 maturity and capability in the blockchain realm."

3 Do you see that?

4 A. Yes.

16:36:20 5 Q. How do you know why Data443 chose to  
6 work with Ripple's technology?

7 A. That was based on Data443's own media  
8 disclosure as cited below.

9 Q. Okay. The phrase "Ripple's technology"  
16:36:41 10 in that sentence, what is it that you're referring  
11 to?

12 A. Actually, I mean here the -- it's a  
13 misstatement. The XRP Ledger.

14 Q. So for the purposes of this sentence,  
16:36:50 15 "Ripple's technology," the reference is to the XRP  
16 Ledger?

17 A. It is the XRP Ledger, yes.

18 Q. Okay. Going back to Appendix D, we  
19 discussed that the second column is a carryover  
16:37:18 20 from Appendix C.

21 Do you recall that?

22 A. Yes.

23 Q. Did you -- did you rely on the category  
24 in Appendix D that counsel provided in Appendix C?

16:37:42 25 A. If it is a carryover, yes, it came from

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16:37:45 1 that table.

2 Q. Okay.

3 A. And I do recall making some adjustments  
4 with some of these companies, but -- after looking  
16:38:00 5 at their websites, but I don't recall which ones.  
6 I'm going to have to cross-reference that.

7 Q. You recall making adjustments to the  
8 second column of Appendix D, is that right?

9 A. For some of the companies, yes, but I  
16:38:10 10 forgot which ones.

11 Q. Okay.

12 A. The challenge with categorization is  
13 that there is no standard. Different exchanges  
14 use different methods. And -- and Consensus  
16:38:25 15 itself and other management consulting groups,  
16 they all have different categorizations, so...

17 Q. Okay.

18 A. I tried to cross-verify.

19 Q. Let's look back at paragraph 57.

16:38:50 20 A. Paragraph 57?

21 Q. Mm-hmm. I'd like to focus on the "Value  
22 Proposition" bullet.

23 A. Yes.

24 Q. Can you read the "Value Proposition"  
16:39:11 25 bullet into the record, please?

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16:39:14 1 A. "A cryptocurrency is more likely to  
2 achieve wide adoption if it solves a  
3 well-understood problem and is coupled to a  
4 transparent business model, so the marketplace  
16:39:25 5 understands how the cryptocurrency is used and how  
6 it creates value."

7 Q. In the context of that sentence, what's  
8 a "transparent business model"?

9 A. When it's -- transparent business model  
16:39:47 10 is business model that is well understood by  
11 outsiders how a company generates revenue and how  
12 it sets up partnerships.

13 Q. In your view, if a company was touting  
14 acceptance of a product, but was not disclosing to  
16:40:01 15 the market that it was also heavily subsidizing  
16 users to use that product, is that a transparent  
17 business model?

18 MR. WHITE: Objection; form.

19 A. Can you restate that question?

16:40:17 20 Q. Sure.

21 MR. SYLVESTER: Actually,  
22 Bridget, would you mind reading that  
23 back?

24 (Whereupon, the record was  
16:40:22 25 read back.)

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16:40:40 1 MR. WHITE: Same objection.

2 A. This is a hypothetical. I would need to

3 know more information about that.

4 Q. What would --

16:40:49 5 A. More context.

6 Q. What would you need to know?

7 A. Well, transparency, there's no binary in

8 transparency of a business model. It's a -- it's

9 a spectrum, I guess, of what is being disclosed to

16:41:09 10 the market. Public companies disclose their

11 business model; private companies, you know, are

12 less open about their business model. Sometimes

13 it's obvious; sometimes it's not obvious.

14 So I would need to know what is the

16:41:28 15 company? What were they disclosing? What were

16 they holding back? Did they call it transparent

17 themselves, what they were doing, or were they --

18 was the media telling -- telling the world that

19 this was a transparent business model?

16:41:46 20 So it's hard to assess that.

21 Q. Why is it that private companies are

22 less open about their business model?

23 MR. WHITE: Objection; form.

24 A. Excuse me.

16:42:09 25 So private companies, particularly

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16:42:11 1 equity investable companies -- and I'm wearing my  
2 hat as a -- as an investor in venture funds --  
3 initially are, one, not even clear -- they know  
4 what -- potentially what their value proposition  
16:42:24 5 is, but they're not clear how they're going to be  
6 making money, how they're going to be generating  
7 revenue.

8 And so the transparency of a business  
9 model can only be so transparent as to even what  
16:42:38 10 the company knows itself. It doesn't want to get  
11 pinned down out -- on the outside, I guess, as in  
12 this is your business model or this is not part of  
13 your business model.

14 It maintains flexibility as the  
16:42:51 15 investors, the private investors, negotiate the  
16 growth and the change and the product development  
17 within that company.

18 So that's why it's -- usually or often  
19 the business model isn't -- it's only partially  
16:43:08 20 known.

21 MR. WHITE: Mark, would now  
22 be an okay time for a break?

23 MR. SYLVESTER: Yeah, fine.  
24 Sure.

16:43:12 25 MR. WHITE: Okay.

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16:43:13 1 THE VIDEOGRAPHER: Off the  
2 record. The time is 4:44.  
3 (Whereupon, a recess is taken.)  
4 THE VIDEOGRAPHER: We'll go  
17:02:56 5 back on the record. The time is 5:04.  
6 BY MR. SYLVESTER:  
7 Q. Professor, I want to make sure I  
8 understand your rubric for inclusion of companies  
9 on Appendix D, so I'm going to go back to a hypo.  
17:03:12 10 Let's assume there's a company that  
11 accepts XRP as payment for its goods, but, in  
12 fact, no one has ever paid for any of that  
13 company's goods in XRP.  
14 Would that company, using your  
17:03:29 15 methodology, be included on Appendix D?  
16 MR. WHITE: Objection; form.  
17 A. So XRP is available, but it's -- or it's  
18 possible to pay in XRP, but nobody actually pays  
19 in XRP? Is that --  
17:03:47 20 Q. Exactly right.  
21 A. Well, from -- again, from the business  
22 analysis perspective, it is still part of -- it is  
23 still a use case.  
24 Q. Okay.  
17:03:59 25 A. Because, again, we're taking a snapshot

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17:04:02 1 in time and we have to figure out has it never  
2 used XRP -- I'm sorry, have people never paid in  
3 XRP? Is it at an inception point? So everything  
4 is a snapshot in time in use and growth.

17:04:19 5 Q. Okay. So I think I understand your  
6 answer to be that hypothetical company would be  
7 included on Appendix B -- sorry, Appendix D, as in  
8 dog, using your rubric?

9 A. It would be.

17:04:30 10 MR. WHITE: Objection.

11 THE WITNESS: I'm sorry.

12 MR. WHITE: You can proceed.

13 Q. So going back to page 9 of your expert  
14 report, paragraph 21, could you explain to me --  
17:04:47 15 again, sticking with the hypo that I just used --  
16 how XRP in that case could arguably be part of the  
17 creation or advancement of the business model of  
18 that company?

19 MR. WHITE: Objection;

17:05:02 20 incomplete hypothetical.

21 A. Well, of course, you're asking me to  
22 speculate on a hypothetical use case --

23 Q. Yes.

24 A. -- that is an extreme, you know, tail of  
17:05:22 25 a spectrum of use. In that case the argument



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17:05:27 1 would be harder to make, but, regardless, it is  
2 still -- the company still made the decision to  
3 allow payment in XRP; i.e., the company actually  
4 trusts XRP and payments in XRP enough for them to  
17:05:45 5 include it in their business model.

6 Q. Would you say the -- in that  
7 circumstance of the hypothetical that I described  
8 that the company's acceptance of XRP advances that  
9 company's business model?

17:06:24 10 A. Well, from the company's expect -- we  
11 can't -- of course, it's a hypothetical, so we  
12 can't really know why that company decided that  
13 they were going to include XRP as a possible  
14 payment mechanism. But, clearly, the company must  
17:06:40 15 have made some decision that we're not privy to as  
16 to why they decided to allow payment in a certain  
17 set of currencies that would advance their  
18 business model and access in the market.

19 Q. Are there any companies on your Appendix  
17:06:57 20 D that accept XRP as payment but as to which  
21 nobody has ever paid in XRP?

22 A. I did not do that analysis. And, one,  
23 it would be very difficult to do that kind of  
24 analysis, if not impossible.

17:07:27 25 Q. I want to return to the issue of

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17:07:30 1 Ripple's UNL.

2 If a hacker hacked into Ripple's website  
3 and replaced Ripple's genuine UNL with a list of  
4 50 malicious nodes, what would be the effect on

17:07:49 5 the XRP Ledger?

6 MR. WHITE: Objection; calls  
7 for speculation.

8 A. That is speculative and I don't know if  
9 Ripple or the Ledger protocol has ever considered  
17:08:08 10 such a case, so I cannot comment or opine on what  
11 the implications of that would be.

12 Q. Let's turn to paragraph 58 of your  
13 report, which is page 27.

14 Do you see Table 1 there on page 27?

17:08:46 15 A. Yes, I do.

16 Q. And Table 1's labeled "Comparison of  
17 Features/Attributes of Top Successful  
18 Cryptocurrencies."

19 Do you see that?

17:08:55 20 A. Yes, I did. Yes, I do.

21 Q. Is this table your expert opinion as to  
22 these features of these cryptocurrencies or is  
23 this an occasion of an aggregation of information  
24 from sources you reviewed in preparing your  
17:09:10 25 report?

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17:09:15 1 A. This table is a result of a combination  
2 of both. I, first, on page 26, laid out some of  
3 these characteristics that are brought up in the  
4 industry as features, as possible features.

17:09:31 5 There's no absolute comparison, but what are  
6 example features. So those are the attributes  
7 that was aggregated from the literature.

8 Then I decided to apply these to  
9 bitcoin, Ethereum or bitcoin, Ether and XRP. And  
17:09:52 10 for that I ended up using the references that are  
11 cited on the bottom of that page to fill in what  
12 is where.

13 Q. Okay. With respect to security risk for  
14 XRP Ledger/XRP, what's written there is "potential  
17:10:15 15 vulnerability from attacks on specific nodes due  
16 to openness and liquidity of system."

17 Do you see that?

18 A. Yes.

19 Q. What does that -- what -- sorry. Strike  
17:10:24 20 that.

21 What does "potential vulnerability from  
22 attacks on specific nodes due to openness and  
23 liquidity of system" mean?

24 A. I did not do an independent analysis of  
17:10:37 25 what that meant. It's -- it's information that I

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17:10:38 1 took from MIT Technology review when I looked for  
2 where the potential risks were that are being  
3 talked about, I guess, on the various, you know,  
4 networks and in the cryptosphere and did it each  
17:10:58 5 for, again, not complete, but examples of security  
6 risks for the three currencies.

7 Q. Sitting here today, do -- do you have an  
8 understanding of -- of the potential vulnerability  
9 being described in that cell of Table 1?

17:11:23 10 A. I have no technical understanding of  
11 what that would mean in the context of the Ledger  
12 protocol.

13 Q. Do you know what kind of security risk  
14 it describes?

17:11:45 15 A. Malicious impacts on specific nodes.

16 Q. How --

17 A. Attacks -- I guess attacks on specific  
18 nodes.

19 Q. How about the portion "due to openness  
17:11:59 20 and liquidity of system"? Do you know what that  
21 means?

22 A. Not on a technical level, no.

23 Q. Do you know at a nontechnical level?

24 A. I'm not going to comment to that until  
17:12:26 25 or unless I've had a chance to review the MIT

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17:12:28 1 Technology review paper to, again, look at the  
2 context in which they use that particular  
3 statement.

4 Q. Okay. The category of liquidity under  
17:12:46 5 "Attributes," do you see that?

6 A. Yes.

7 Q. What does liquidity mean in this  
8 context?

9 A. A high -- sorry. High-trading volumes  
17:13:02 10 and, therefore, availability on the market.

11 Q. And how did you determine that all three  
12 of these digital assets have high-trading volumes?

13 A. Based on information that's available on  
14 various different sites and how much is being  
17:13:27 15 traded on a daily basis and -- for all three of  
16 these currencies, in addition to others, as I list  
17 in other -- where is it? -- in Chart 4 gives us  
18 information on liquidity. But "high" is not a  
19 numeric designation, of course.

17:13:59 20 Q. Let's look at paragraph 60 on the next  
21 page. Looking at the third sentence, it says  
22 "Much like bitcoin became the digital peer-to-peer  
23 money transfer standard, XRP became the digital  
24 standard for currency exchange, asset settlement  
17:14:18 25 and remittances."

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17:14:20 1 Do you see that?  
2 MR. WHITE: Objection;  
3 misstates the document.  
4 MR. SYLVESTER: Does it?  
17:14:23 5 MR. WHITE: Yes.  
6 THE WITNESS: Actually, I  
7 state "a digital standard."  
8 MR. SYLVESTER: Thank you for  
9 the correction, both of you.  
17:14:28 10 BY MR. SYLVESTER:  
11 Q. My question is whether or not that  
12 sentence, with the correction from counsel and  
13 from yourself, is that your expert opinion or is  
14 that something that you drew from one of the  
17:14:43 15 sources that you reviewed in preparation of your  
16 report?  
17 A. It is drawn from sources in my report.  
18 Q. Okay. And I see that there's not a  
19 footnote here.  
17:14:56 20 Sitting here today, do you know where  
21 you drew that information that we just read  
22 together?  
23 A. I'm going to have to look that up. I  
24 don't know right off --  
17:15:24 25 Q. Okay.

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17:15:24 1 A. -- as I'm sitting here.

2 Q. The next sentence that begins "Usability  
3 and standardization," do you see that?

4 A. Yes.

17:15:38 5 Q. Take your time to read it, obviously,  
6 but is that also a case of -- strike that.

7 Is that sentence your expert opinion or  
8 is that an example of information that you drew  
9 from other sources in preparation of your report?

17:15:55 10 A. The information that we need, custodial  
11 and noncustodial actors, or specifically this  
12 sentence?

13 Q. The entire sentence.

14 A. Okay. That's how I understand -- what I  
17:16:07 15 understand custodial actors to be. So it was my  
16 own kind of statement.

17 Q. Okay. Do all cryptocurrencies in your  
18 view need to have institutional investors such as  
19 hedge funds regardless of their use cases?

17:16:33 20 MR. WHITE: Objection; form,  
21 calls for speculation.

22 A. Can you repeat the question, please?

23 Q. Sure.

24 Do all cryptocurrencies need to have  
17:16:50 25 institutional investors such as hedge funds

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17:16:53 1 regardless of their use cases?

2 A. It is -- it is speculative. I will turn  
3 it around in that having institutional investors  
4 that move a lot of assets on exchanges creates  
17:17:11 5 liquidity. So it's sort of the other way around,  
6 so...

7 Q. Let me read the sentence and -- and see  
8 if we can come to a common understanding. So it  
9 says -- your sentence says "Usability and  
17:17:31 10 standardization require the cryptocurrency to have  
11 well-functioning custodial actors, including  
12 exchanges, institutional investors such as hedge  
13 funds, and e-commerce with viable scalable use  
14 cases."

17:17:41 15 A. Uh-huh.

16 Q. So I'm just picking out the requirement  
17 of "institutional investors such as hedge funds"  
18 and asking is it the case that all  
19 cryptocurrencies need to have institutional  
17:17:51 20 investors such as hedge funds in order to be  
21 usable?

22 A. It would help in creating liquidity  
23 depending on what the cryptocurrency --  
24 cryptocurrency's use case is. AND you're asking  
17:18:08 25 about all. There's now nine -- twelve thousand



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17:18:13 1 cryptocurrencies, so I am not sure which  
2 cryptocurrencies would benefit from that.

3 Q. Okay. Let's go to 63, please, on the  
4 next page. Paragraph 63. This paragraph states  
17:18:39 5 "The importance of liquidity and trading volume on  
6 exchanges cannot be overstated. Liquidity  
7 attracts users and is a key underpinning of the  
8 value of a cryptocurrency."

9 Do you see that?

17:18:50 10 A. I see that.

11 Q. Okay. Is that your expert opinion or is  
12 that information that you drew from other sources  
13 in the course of preparing your report?

14 A. That is my opinion or information that  
17:19:08 15 I've -- sorry. How did you differentiate? Is it  
16 your opinion or is it -- would you repeat that?

17 Q. Absolutely.

18 Is paragraph 63 your expert opinion in  
19 this case that you applied your expertise to and  
17:19:22 20 your methodology as set forth in the report?

21 That's one option. The other option is, or is it  
22 information that you drew from any of the sources  
23 that you reviewed in preparing your report?

24 A. This is what I applied my expert opinion  
17:19:36 25 to.

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17:19:38 1 Q. Okay. Can you explain to me what -- how  
2 you applied your expertise to generate the opinion  
3 set forth in paragraph 63?

4 A. It sort of goes back to the statements  
17:19:57 5 that I made earlier in the report regarding --  
6 regarding some of the characteristics of  
7 successful currencies, successful  
8 cryptocurrencies, and including the table that we  
9 discussed, Table 1 that we discussed.

17:20:12 10 That broad availability and  
11 liquidity of a currency, of a cryptocurrency, in  
12 an ecosystem that can readily access this -- this  
13 currency for all sorts of applications is -- sort  
14 of a more high-level statement, is important to  
17:20:36 15 attract users of the cryptocurrency. It's really  
16 a high-level statement more so than and derives  
17 from my earlier statements in my report.

18 Q. You say in 63 that liquidity "is a key  
19 underpinning of the value of a cryptocurrency," is  
17:20:57 20 that right?

21 A. Yes.

22 Q. Is price one way to measure a  
23 cryptocurrency's value?

24 MR. WHITE: Objection.

17:21:09 25 A. It is, but what -- what I intended here

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17:21:12 1 with "value of a cryptocurrency" is the utility of  
2 the cryptocurrency. Value as in utility.

3 Q. In general, all other things equal, if  
4 an asset becomes more liquid, what effect does  
17:21:32 5 that have on the asset's price?

6 MR. WHITE: Objection; calls  
7 for speculation.

8 A. I think I would have to speculate. I  
9 don't think there is a unique answer to that of  
17:21:53 10 how liquidity is directly correlated to price.

11 Q. Okay. You write that "The importance of  
12 liquidity and trading volume on exchanges cannot  
13 be overstated."

14 Do you see that?

17:22:11 15 A. Yes.

16 Q. Given the importance of listing on  
17 exchanges to the value of a cryptocurrency, in  
18 your view would the holders of a cryptocurrency  
19 find it important if a company said they were  
17:22:25 20 trying to obtain listings for that  
21 cryptocurrency?

22 MR. WHITE: Objection; calls  
23 for speculation.

24 A. Was your question users? Sorry, can you  
17:22:36 25 repeat -- repeat the question?

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17:22:40 1 Q. It was holders, but I'll repeat the  
2 whole thing.

3 A. Holders. Okay.

4 Q. Given the importance of listing on  
17:22:48 5 exchanges to the value of cryptocurrency -- as set  
6 forth in your paragraph 63 -- in your view would  
7 the holders of a cryptocurrency find it important  
8 if a company said they were trying to obtain  
9 listings for that cryptocurrency?

17:22:58 10 MR. WHITE: Same objection.

11 A. From an investment perspective that may  
12 be important, but I wouldn't speculate on that. I  
13 don't know.

14 Q. What do you mean by "from an investment  
17:23:19 15 perspective that may be important"?

16 MR. WHITE: Objection --

17 A. What do you mean with holders of  
18 cryptocurrencies? Owners in their wallets, or  
19 what do you mean by "holders"?

17:23:37 20 Q. By holder I meant owner, right.

21 MR. WHITE: Same objection to  
22 this line of questioning.

23 Q. The question was what do you mean by  
24 your testimony "from an investment perspective  
17:23:47 25 that may be important"?

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17:23:50 1 A. I'm going to rephrase that. It depends  
2 on what --

3 MS. ZORNBERG: Hold on.

4 THE WITNESS: Sorry.

17:23:53 5 MR. WHITE: I believe the  
6 court reporter only read back part of  
7 the statement, so if we could  
8 please -- let's go -- let's go back.  
9 Let's see.

17:24:14 10 Please reread your full  
11 question as fully stated.

12 MR. SYLVESTER: You want me  
13 to reread my entire full question? I  
14 was asking him about his testimony.

17:24:23 15 MR. WHITE: Yes.

16 THE WITNESS: And I want to  
17 strike my answer, if that is possible,  
18 or modify my answer.

19 BY MR. SYLVESTER:

17:24:31 20 Q. You can always modify your answer.

21 A. Okay. I want to modify my answer.

22 Q. You're welcome to. Please, go ahead.

23 A. That it depends on what the objective is  
24 of the holder of a crypto asset.

17:24:43 25 Q. Okay. If the holder of a crypto asset

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17:24:45 1 has an investment objective, then in that case  
2 would that cryptocurrency holder find it important  
3 if the company said they were trying to obtain  
4 listings for that cryptocurrency?

17:24:55 5 MR. WHITE: Objection; calls  
6 for speculation.

7 A. Again, I would need more context, and I  
8 cannot answer that question with a yes or no.

9 Q. Okay. Let's turn to page 31, paragraph  
17:25:20 10 69.

11 A. Yes, I have it.

12 Q. Okay. My -- my question on that is just  
13 what source you used to -- strike that.

14 What's the basis for the facts set forth  
17:25:45 15 in paragraph 69?

16 A. That was a follow-up on the citations  
17 that I cited in -- in 68 on how the crypto space  
18 is developing, institutional -- is developing,  
19 institutional investors are getting involved. So

17:26:14 20 within these documents they provided more  
21 information on the breadth of the investment space  
22 in cryptocurrency.

23 Q. When you say "these documents," which  
24 documents are you referring to?

17:26:22 25 A. I'm sorry. I meant the citations.

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17:26:26 1 Citation 41. Citation 41 and 42, which I cited in  
2 the previous paragraph. It was from those same  
3 citations.

4 Q. Okay. The very last sentence of  
17:26:43 5 paragraph 70 says "Although individual purchasers  
6 made up just 36 percent of the exchange's volume  
7 during the quarter ending December 31, more than  
8 90 percent of Coinbase's revenue came from retail  
9 trades."

17:26:56 10 Do you see that?

11 A. I see that.

12 Q. Was that fact drawn from the article  
13 referenced at Footnote 43?

14 A. I believe so, yes.

17:27:09 15 Q. Okay. Other than the reference at  
16 Footnote 43, do you have any other basis to  
17 believe that that 36 percent or 90 percent figure  
18 are accurate?

19 A. I didn't do any independent analysis of  
17:27:22 20 that.

21 Q. Okay.

22 A. Again, it's a snapshot in time.

23 Q. In paragraph 71, in the first sentence,  
24 you write "In summary, increased involvement of  
17:27:32 25 institutional and retail users benefits the

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17:27:34 1 liquidity of cryptocurrencies on exchanges and, in  
2 turn, increases business opportunities for new  
3 start-ups and corporate use cases."

4 Do you see that?

17:27:41 5 A. Yes.

6 Q. Okay. In the context of benefiting  
7 liquidity of cryptocurrencies on exchanges, does  
8 "involvement" in your first sentence mean trading?

9 MR. WHITE: Objection; form.

17:28:07 10 A. I'm going to have to reread the previous  
11 paragraphs because this is a summary of the  
12 previous paragraphs, but trading definitely is  
13 part of it.

14 I don't think there was any -- looking  
17:28:41 15 back at these paragraphs, a specific meaning to  
16 "involvement" or "engagement" in.

17 Q. But you said trading is part of it, is  
18 that right?

19 A. Yes. I think, again, it refers to  
17:28:58 20 Footnote 41, talking about institutional investors  
21 getting -- are getting involved. So the use of  
22 "involve" includes trading.

23 Q. Okay. How does trading -- strike that.

24 How does increased trading by  
17:29:19 25 institutional or retail investors increase



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17:29:22 1 business opportunities for new start-ups and  
2 corporate use cases?

3 A. The more -- the more liquid and  
4 available a cryptocurrency is in the market, the  
17:29:42 5 more likely businesses might use that currency,  
6 for example, as a payment mechanism for their  
7 businesses. That's really what it means.

8 Q. In the second paragraph of -- strike  
9 that.

17:30:10 10 In the second sentence of paragraph 71,  
11 you write "It is important to a given  
12 cryptocurrency that both institutional and retail  
13 market participants can take advantage of the  
14 benefit of liquidity, which is one of the key  
17:30:22 15 value propositions of integrating such a  
16 cryptocurrency in current and new use case  
17 applications."

18 Do you see that?

19 A. I see that.

17:30:30 20 Q. How is it that a retail market  
21 participant can take advantage of the benefit of  
22 liquidity?

23 A. Well, increasingly retail market  
24 participants are participating in various  
17:30:52 25 exchanges, as I noted in paragraph 70. Buy-sell

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17:31:03 1 opportunities. I don't know if I need to say  
2 anything beyond that.

3 Q. When you say "retail market participants  
4 are participating in various exchanges," you mean  
17:31:17 5 trading on those exchanges, is that right?

6 MR. WHITE: Objection; form.

7 A. In the context of this sentence,  
8 "institutional and retail market participants" is  
9 not only the institutional retail -- I mean going  
17:31:37 10 to the previous sentence. And not only  
11 institutional and retail investors but, also,  
12 large and small companies.

13 So "market participants" is a pretty  
14 broad umbrella or participant in the market.

17:32:01 15 Q. Okay. Let's go to paragraph 101,  
16 please. That is on page 46.

17 A. Okay.

18 Q. Okay. So near the bottom of the  
19 paragraph, you write "Ripple sought to reduce  
17:32:28 20 these friction costs by enabling participants to  
21 message, clear, and settle transactions at low  
22 cost and high speed."

23 Do you see that?

24 A. I see that.

17:32:39 25 Q. What steps did Ripple take to accomplish

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17:32:42 1 the ends you describe in this paragraph?

2 MR. WHITE: Objection; form.

3 A. Well, it goes back to the vision of the  
4 company and the products that it would release on  
17:33:18 5 the market to -- it says "sought to reduce." So  
6 it is really working towards that process if you  
7 look at the product arc of -- of Ripple, where it  
8 seeks to develop software that allows -- that  
9 would allow banks to reduce or to message, clear,  
17:33:47 10 and settle transactions at low cost and high  
11 speed. It goes back to the products that Ripple  
12 develops.

13 Q. The last sentence of paragraph 101 says  
14 "With the Internet of Value, a value transaction  
17:34:03 15 such as a foreign currency payment can happen  
16 instantly, just as how people have been sharing  
17 words, images, and videos online for decades."

18 Do you see that?

19 A. Yes.

17:34:13 20 Q. Is that sentence your expert opinion?

21 A. That sentence has been used very  
22 colloquially in the -- in the crypto industry and  
23 at meetings, my UBRI meetings, and other  
24 conversations that we've had in the context of --  
17:34:41 25 of the FinTech Collaboratory.

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17:34:44 1 Q. When you say "it's been used  
2 colloquially at UBRI meetings," who is it that has  
3 used this -- this sentence in the past?

4 A. I don't know specifically about a -- a  
17:34:58 5 "who," but it was -- I'm not sure who initially  
6 promoted it, but it became sort of a, I guess, a  
7 statement or a value proposition or a vision that  
8 people in the industry were starting to use, but I  
9 forgot who actually originally made the statement  
17:35:24 10 of Internet of Value. It's become a verbiage, a  
11 term, of the blockchain era.

12 Q. If this is a statement from someone else  
13 in the marketplace, is there a reason why you  
14 didn't cite it?

17:35:38 15 MR. WHITE: Objection.

16 A. It would have been -- there's no reason  
17 why it was not cited. I mean, it's sort of a  
18 general statement around this whole Internet of  
19 Value. It would have been a personal  
17:36:17 20 communication or...

21 Q. What do you mean by "a personal  
22 communication"?

23 A. Well, I mean, I spend my life day in and  
24 day out in this industry. So there's a lot of  
17:36:35 25 terms in the context of expert opinion that aren't

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17:36:38 1 necessarily cited to a specific citation, but are  
2 sort of part of the vernacular in the industry.  
3 But it has come up at these UBRI meetings, as I  
4 mentioned, when the group of 27 universities meet  
17:36:51 5 and then I don't know how -- how it came about.

6 And I apologize that there's no specific  
7 citation, but I -- I wouldn't know which one to  
8 cite.

9 Q. Did you write that last sentence of  
17:37:11 10 paragraph 101?

11 MR. WHITE: Objection.

12 I'm going to instruct you not  
13 to answer on the basis of the work product  
14 privilege.

17:37:20 15 Q. Okay. Paragraph 102 -- actually, let's  
16 move -- let's move to paragraph 110, please. That  
17 is on page 51. The first sentence of paragraph  
18 110 is "Separate from its equity investment, I  
19 understand that Ripple distributed XRP to an array  
17:37:46 20 of counterparties with the goal of increasing  
21 liquidity in the market."

22 Do you see that?

23 A. Yes.

24 Q. Okay. My first question is, does the  
17:37:54 25 word "distributed" encompass Ripple's sale of XRP?

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17:38:07 1 A. Excuse me.

2 Does it encompass sales?

3 Q. Yes.

4 A. Yes.

17:38:18 5 Q. The citation for that first sentence is  
6 the -- is Ripple's Wells submission.

7 Do you see that, Footnote 79?

8 A. Yes.

9 Q. What was it about the Wells submission  
17:38:28 10 that you relied on for the text of that sentence?

11 A. Sorry, what is the -- can you rephrase  
12 that question?

13 Q. Sure.

14 What -- what was it that you learned  
17:38:52 15 from or drew from the Wells submission that  
16 informed the text of the first sentence of  
17 paragraph 110?

18 MR. WHITE: Objection. You  
19 can show him the Wells.

17:39:01 20 A. It -- from my reading of the Wells. I  
21 mean, I guess that's where I got the information.

22 Q. Separate from your review of the Wells  
23 submission, did you have an understanding that  
24 Ripple sold XRP?

17:39:23 25 A. Yes.

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17:39:24 1 Q. How did you acquire that understanding?

2 A. I looked at the consolidated financial  
3 statements of Ripple.

4 Q. And those demonstrated that Ripple sold  
17:39:33 5 XRP?

6 A. Yes. Those are the XRP information on  
7 the sales of XRP.

8 Q. You write in the second sentence of 110,  
9 "Such distributions are fully consistent with the  
17:40:07 10 methods of product adoption of high-technology  
11 companies identified above and the milestone  
12 expectations of Ripple's equity investments."

13 Do you see that?

14 A. Yes.

17:40:19 15 Q. How was it in your view that Ripple's  
16 sales of XRP were consistent with the methods of  
17 product adoption of high-technology companies?

18 A. Well, digital companies and other  
19 companies, but companies like Ripple, that sell  
17:40:39 20 software on the market that depends on, in this  
21 case, XRP to function is consistent with what  
22 these start-up companies do or start-up companies  
23 try to do with new products that they sell in the  
24 market. They drive -- they try to drive market  
17:41:06 25 adoption. They try to get more people to use

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17:41:08 1 these products. But the product cannot be used  
2 without the availability of liquidity in this case  
3 in the market.

4 So, therefore, what Ripple did is they  
17:41:25 5 undertook a -- what we call a penetration pricing  
6 strategy to sell part of its technology, often at  
7 a discount, as I talk about later on, in the  
8 market to various different parties to allow the  
9 markets to better use the software, the different  
17:41:50 10 products that Ripple was releasing in the market.

11 Q. What software does Ripple sell that  
12 requires XRP to function?

13 A. Well, ODL, On-Demand Liquidity, which I  
14 guess was the former, I guess, xRapid. But  
17:42:15 15 essentially any transactions that need to happen  
16 on exchanges require the fee that is paid in -- in  
17 XRP as well. There's multiple products that  
18 existed out in the market that require the  
19 availability of XRP for market participants to use  
17:42:42 20 those products. So payment processors, yeah.

21 Q. Focusing on ODL, does -- does ODL  
22 require the availability of liquidity in the  
23 market to function?

24 MR. WHITE: Objection; form.

17:43:04 25 A. Well, specific, you know, payment rails,



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17:43:07 1 I guess, between different countries. I mean,  
2 yes, they require that.

3 Q. What -- what do you know about how  
4 Ripple's ODL product works?

17:43:19 5 MR. WHITE: Objection; vague.

6 A. XRP functions at the level -- that I  
7 understand it, XRP functions as a bridge currency  
8 between one fiat currency and another fiat  
9 currency.

17:43:36 10 Q. Do you know who Ripple's customers are  
11 that purchase the ODL product from Ripple?

12 A. Who the current buyers are, what the  
13 current -- yeah, current market is?

14 Q. Yes.

17:44:07 15 A. I believe it's mainly payment  
16 processors.

17 Q. What's an example --

18 A. Large industrials. Some banks, I  
19 believe. But, anyhow, I don't have the full list.

17:44:19 20 I have to check. I have to look that up.

21 Q. To your knowledge, do individual retail  
22 users use Ripple's ODL product?

23 A. Not to my knowledge.

24 Q. Would Ripple's sales to individual --  
17:44:45 25 strike that.

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17:44:45 1 Would Ripple's sales of XRP to  
2 individual users promote the adoption of ODL as a  
3 successful product?

4 MR. WHITE: Objection; calls  
17:44:56 5 for speculation.

6 A. I mean, there's too much -- too many  
7 uncertainties and context missing to be able to  
8 respond to that with a yes or no.

9 Q. Given what you know about the ODL  
17:45:22 10 product, is it safe to say that Ripple's sales of  
11 XRP to individual users were not in connection  
12 with promoting adoption of the ODL product?

13 MR. WHITE: Objection; form.

14 A. I'm not sure I understand your question.  
17:45:42 15 Could you rephrase that, please?

16 Q. Sure.

17 I think we've established that  
18 individuals do not use ODL, is that right?

19 A. That's not my understanding, sir.

17:45:55 20 Q. Okay. So if an individual purchases  
21 XRP, it's not for the purpose of using ODL, right?

22 MR. WHITE: Objection; form.

23 A. That's not my understanding.

24 Q. I can't tell if you're agreeing or  
17:46:05 25 disagreeing. I'm sorry.

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17:46:06 1 A. That's not my understanding. Sorry.  
2 No.

3 Q. It's probably because I'm asking the  
4 question poorly.

17:46:15 5 You would agree that if an individual  
6 purchases XRP, that individual is not purchasing  
7 the XRP for the purpose of using ODL, is that  
8 right?

9 MR. WHITE: Objection.

17:46:29 10 A. It's my understanding that it's only  
11 large corporates and institutionals, but I would  
12 have to review that.

13 Q. Okay. Let's move to paragraph 120,  
14 please. That's on page 59. The first sentence of  
17:47:00 15 120 says "During its product development, Ripple  
16 has enabled several important use cases related to  
17 payment services, cross-currency settlements, and  
18 FX (foreign exchange) solutions."

19 Do you see that?

17:47:12 20 A. Yes.

21 Q. In the context of this sentence, does  
22 "enabled" mean that Ripple developed these use  
23 cases?

24 MR. WHITE: Objection; form.

17:47:37 25 A. Based on the ones that I list below, I

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17:47:45 1 guess ripple designed these products.

2 Q. Moving to the bullet that starts "ODL"  
3 on page 60, do you see that?

4 A. Yes.

17:48:03 5 Q. It says "ODL, formerly known as xRapid,  
6 is a liquidity solution for banks that uses XRP as  
7 a bridge currency," and then continues.

8 Do you see that?

9 A. Yes.

17:48:15 10 Q. Do any banks currently use ODL today?

11 MR. WHITE: Objection;

12 foundation.

13 A. I have to defer to -- or refer to the  
14 deposition by Dr. Birla -- or Mr. Birla, I'm not  
17:48:42 15 sure -- who said that -- I think he indicated that  
16 ODL was currently not used by banks.

17 Q. Okay. Moving to the last bullet on page  
18 60, you write "Ripple products also make use of  
19 ILP, an open protocol suite for sending payments  
17:48:57 20 across different ledgers, most often cited by  
21 third-party developers as a key differentiator for  
22 adopting XRP or use of the XRP Ledger."

23 Do you see that?

24 A. I see that.

17:49:08 25 Q. Okay. Who are the third-party

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17:49:12 1 developers that you're referencing in this  
2 sentence?

3 A. Third-party use case developers.

4 Q. And who are they? Who are you  
17:49:28 5 describing in this sentence?

6 MR. WHITE: Objection; form.

7 A. These are not individuals. These are  
8 companies that have adopted XRP or used the XRP  
9 Ledger because ILP allows them to cross over  
17:49:51 10 between multiple different ledgers and even  
11 between regular bank accounts and ledgers.

12 Q. Right. I'm trying to get at which  
13 third-party developers have made the claim --

14 A. Oh.

17:50:03 15 Q. -- as expressed in your first sentence.

16 A. I am going to have to check my Footnote  
17 92 and 93 to make reference to that statement.

18 Q. Sitting here today, do you know whether  
19 or not the references cited in Footnotes 92 or 93  
17:50:48 20 support the statement that "ILP is most often  
21 cited by third-party developers as a key  
22 differentiator for adopting XRP or the use of the  
23 XRP Ledger"?

24 A. I do not know which of these two  
17:51:02 25 references would have that specific statement in

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17:51:05 1 it.

2 Q. Are you certain that one of them does?

3 A. I would have to --

4 MR. WHITE: Objection.

17:51:12 5 A. I would have to look back at these  
6 footnotes to -- to check that.

7 Q. Let's turn to paragraph 123 on page 63.  
8 The second sentence starts with "Aside from  
9 multiple e-commerce companies using the XRP Ledger  
17:51:41 10 because of its speed and cost benefits..."

11 Do you see that?

12 A. Yes.

13 Q. Which e-commerce companies use the XRP  
14 Ledger?

17:52:04 15 A. Well, many of the e-commerce companies  
16 are listed on the -- both Appendix C and Appendix  
17 D., and any company that accepts XRP for its, you  
18 know, product sales.

19 Q. Okay. So to make sure I understand the  
17:52:27 20 sentence, when you say "multiple e-commerce  
21 companies use the XRP Ledger because of its speed  
22 and cost benefits," you're referring to e-commerce  
23 companies that accept XRP as payment, is that  
24 right?

17:52:46 25 A. Yes. This is -- 120 -- paragraph 123 is

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17:52:48 1 a setup for paragraph 124, which refers to "these  
2 use cases." So it's connected between two -- for  
3 example, the example of furniture that you brought  
4 up earlier would be an example.

17:53:07 5 Q. Going back to paragraph 123, how do you  
6 know that these e-commerce companies are using the  
7 XRP Ledger because of its speed and cost benefits?

8 A. This goes back to some of the previous  
9 citations related to some of the companies I  
17:53:56 10 listed before, as well as other readings on  
11 companies where there are specific quotations from  
12 business owners saying "I like it because of  
13 speed."

14 Q. Which companies are you --

17:54:09 15 A. For example, TapJets mentioned that  
16 because of speed, but I did not cite specifically  
17 to the statement of the business owner of TapJets  
18 who actually said that. That's an omission on my  
19 behalf. I apologize.

17:54:25 20 Q. Aside from the TapJets statement that  
21 you just described, were there other occasions  
22 where you were able to determine that e-commerce  
23 companies had elected to use the XRP Ledger  
24 because of its speed and cost benefits?

17:54:42 25 A. There are other quotes that I've come

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17:54:44 1 across in my research, yes.

2 Q. Are those incorporated in your report  
3 anywhere?

4 A. I'm going to have to check which of  
17:54:58 5 these use cases those were. I apologize that I  
6 did not cite specifically those, to those  
7 companies and those business owners who explicitly  
8 stated that.

9 Q. Okay. Let's turn to paragraph 33,  
17:55:23 10 please.

11 A. Sorry, paragraph?

12 Q. Thirty-three on page 16.

13 The sentence near the end of the  
14 paragraph starts "When a user sends bitcoin, the  
17:55:49 15 transaction is bundled in a block with 1,000" to  
16 20 -- strike that.

17 Let's move to paragraph 35. The last  
18 sentence of paragraph 35 says "Current estimates  
19 suggest there are over 700,000 blocks on the  
17:56:03 20 bitcoin blockchain."

21 Do you see that?

22 A. I see that.

23 Q. What's your source for that statement?

24 A. It's probably one of the ones that was  
17:56:19 25 cited earlier such as 20, but I did not



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17:56:23 1 specifically cite to that.

2 Q. Do you know sitting here today what  
3 source you used to come up with that sentence in  
4 paragraph 35?

17:56:37 5 A. I am not sure.

6 Q. Okay.

7 A. But I'm assuming that where it came from  
8 was cited in one of the earliest -- earlier  
9 references when I described bitcoin.

17:56:49 10 Q. Okay. The same question for paragraph  
11 38 on page 18. About the center of that paragraph  
12 it reads "By design, the rewards halves after  
13 210,000 new blocks, or about every four years,  
14 until reaching the maximum supply of 21 million  
17:57:15 15 coins. In May 2020, the block reward was halved  
16 for a third time to 6.25 BTC."

17 Do you see that?

18 A. I see that.

19 Q. What was your source for that  
17:57:25 20 information?

21 A. I'm going to have to look back at where  
22 that came from.

23 Q. Sitting here today, you're not sure what  
24 source you used?

17:57:43 25 A. Which source are the ones that I -- that

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17:57:45 1 I cited, I don't know. Don't know, no.

2 Q. Let's look at paragraph 46 on page 22.  
3 This is in reference to the XRP Ledger. The last  
4 sentence says "The number of validators has grown  
17:58:09 5 to 150 around the world, including clients, users,  
6 and company servers; notable validators include  
7 Microsoft and Massachusetts Institute of  
8 Technology."

9 Do you see that?

17:58:22 10 A. On the top of 22?

11 Q. Yes.

12 A. Yes.

13 Q. What is your source for that  
14 information?

17:58:36 15 A. I believe it's both information based on  
16 the -- my Reference 26, information that's  
17 available on Ripple sites. And since MIT is one  
18 of the -- one of the UBRI universities, it's one  
19 of -- one of our colleagues in the partnership.  
17:58:59 20 So I knew -- I knew about that one.

21 Q. Okay.

22 MR. SYLVESTER: I would like  
23 to take a brief break and then we can  
24 wrap this up if that sounds all right.

17:59:09 25 THE VIDEOGRAPHER: Going off

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17:59:09 1 the record. The time is 6 p.m.

2 (Whereupon, a recess is  
3 taken.)

4 THE VIDEOGRAPHER: We'll go

18:12:31 5 back on the record. The time is 6:13.

6 BY MR. SYLVESTER:

7 Q. Professor, how did you come to be  
8 retained as an expert in this case?

9 A. I initially received a call from  
18:12:44 10 counsel. I --

11 MR. WHITE: I caution you not  
12 to disclose the substance of  
13 conversations with counsel.

14 THE WITNESS: All right.

18:12:57 15 A. I received a -- a call; we had a  
16 discussion. They disappeared and came back at one  
17 point and said "We'd like to retain you."

18 Q. Which counsel reached out to you?

19 A. I believe it was Michael Kellogg.

18:13:17 20 Q. When was that initial -- sorry. Go  
21 ahead.

22 A. At least the firm, but I don't know who  
23 it was within the firm.

24 Q. When was that initial call?

18:13:30 25 A. Would have been April 2021.

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18:13:32 1 Q. Okay. Did you do anything today to  
2 prepare for your deposition? Strike that. Taking  
3 out "today."

4 Did you do anything to prepare for your  
18:13:43 5 deposition today?

6 A. Oh. Yes.

7 Q. What did you do?

8 A. I reread all the reports, my reports,  
9 rebuttal reports, filings, depositions. So did a  
18:14:00 10 reread of all of the materials and we had a couple  
11 preparation sessions.

12 Q. Who participated in your preparation  
13 sessions?

14 A. It was counsel at Debevoise, Kellogg  
18:14:20 15 Hansen. And I forgot the other counsel.

16 Q. About how long did you spend in  
17 preparation with counsel prior to your  
18 deposition?

19 A. As in hours?

18:14:38 20 Q. Yes.

21 A. In total, probably two days.

22 Q. Two eight-hour days?

23 A. Two half days and one full day. So  
24 three separate meetings.

18:14:52 25 Q. Other than counsel, did anyone else

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18:14:54 1 assist with your preparation for your deposition  
2 today?

3 A. No.

4 MR. SYLVESTER: That's all  
18:15:00 5 the questions I have.

6 Thank you.

7 THE WITNESS: Thank you.

8 MR. WHITE: So we will have  
9 some redirect and we can go now if you  
18:15:08 10 want.

11 MR. SYLVESTER: Go ahead.

12 MR. WHITE: Do we want to  
13 switch?

14 MR. SYLVESTER: I'm  
18:15:14 15 comfortable here, but if you'd like to  
16 switch, that's fine by me.

17 MS. ZORNBERG: I think you  
18 should switch because it's video.

19 MR. WHITE: Because of video,  
18:15:20 20 yeah. Go off the video.

21 THE VIDEOGRAPHER: Going off  
22 the record. The time is 6:16.

23 (Pause)

24 THE VIDEOGRAPHER: We'll go  
18:16:28 25 back on the record. The time is 6:17.

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18:16:31 1 CROSS-EXAMINATION

2 BY MR. WHITE:

3 Q. Dr. Adriaens, earlier today you were  
4 asked about some language in paragraph 43 of your  
18:16:39 5 report that is similar to language in another  
6 source that was marked as Exhibit PA 24.

7 Do you recall that line of testimony?

8 A. Yes, I do.

9 Q. Would you focus with me on the two  
18:16:53 10 sentences you were asked about in that paragraph,  
11 which is the first two sentences of paragraph 43?  
12 Do you view the statements made in those sentences  
13 to be in any way controversial?

14 MR. SYLVESTER: Object to  
18:17:09 15 form.

16 A. No, I do not. I think they're very  
17 high-level descriptions.

18 Q. Since reviewing Exhibit PA 24 earlier  
19 today, have you looked into whether -- into  
18:17:21 20 whether Exhibit PA 24 is the only source that uses  
21 that language?

22 A. Yes. After I was asked by SEC counsel  
23 regarding these two sentences, I decided to take  
24 advantage of one of our breaks to do a search on  
18:17:42 25 the exact statements, a basic Google search. And

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18:17:51 1 I found that these exact sentences -- or these  
2 sentence -- these sentences, give or take one word  
3 or two, did actually appear in a lot of crypto  
4 sites, such as Medium, in book chapters, and  
18:18:10 5 other -- other places.

6 Q. Was it ever your intention to take  
7 language from some particular source and not  
8 provide a citation?

9 A. No, it was never my intention to not  
18:18:26 10 cite if this was identical to something that we  
11 find somewhere else.

12 Q. Let me shift to another topic.

13 You recall that Mr. Sylvester spent  
14 quite some time today questioning you about  
18:18:41 15 back -- background factors set forth in Part 2 of  
16 your report.

17 Do you recall that testimony?

18 MR. SYLVESTER: Object to  
19 form.

18:18:46 20 A. Yes.

21 Q. Look with me at paragraph 23 of your  
22 report. Let me know when you're there.

23 A. I'm there.

24 Q. Do you see there that you characterize  
18:18:58 25 Part 2 as "background"?

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18:19:04 1 MR. SYLVESTER: Object to  
2 form.

3 A. Yes.

4 Q. Are you a technical expert in the  
18:19:07 5 operational details of how the XRP Ledger or other  
6 blockchains work?

7 No. As I stated or testified earlier in the -- today's  
8 deposition, my background is in the business analytics,  
9 business development, and business applications of the  
18:19:28 10 blockchain and digital currencies.

11 Q. And that's the expertise you brought to  
12 bear in this case, correct?

13 MR. SYLVESTER: Object to  
14 form.

18:19:36 15 A. That's the expertise I brought to bear.

16 Q. Look with me now at paragraphs 19  
17 through 21. Let me know when you've had a chance  
18 to review them.

19 A. Yes.

18:19:51 20 Q. Those paragraphs summarize the opinions  
21 that you've offered in this case, correct?

22 A. Yes, they do.

23 Q. Is expertise in the technical details of  
24 how XRP Ledger validation works necessary for any  
18:20:07 25 of the opinions that you've offered?



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18:20:09 1 A. No, it isn't.

2 MR. WHITE: That's all the  
3 questioning I have subject to any  
4 further questioning. I will request  
18:20:16 5 to read and sign and designate the  
6 transcript confidential.

7 MR. SYLVESTER: I don't have  
8 anything. Thanks.

9 THE VIDEOGRAPHER: That  
18:20:21 10 concludes today's deposition. The  
11 time is 6:21.

12 (Whereupon, the deposition  
13 was concluded at 6:21 p.m.)  
14

16:56:00 15

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1 STATE OF NEW YORK )  
2 ) ss:  
3 COUNTY OF NEW YORK )

4 I hereby certify that the witness in the  
5 foregoing deposition, DR. PETER ADRIAENS was by me duly  
6 sworn to testify to the truth, the whole truth and  
7 nothing but the truth, in the within-entitled cause; that  
8 said deposition was taken at the time and place herein  
9 named; and that the deposition is a true record of the  
10 witness's testimony as reported by me, a duly certified  
11 shorthand reporter and a disinterested person, and was  
12 thereafter transcribed into typewriting by computer.

13 I further certify that I am not interested in  
14 the outcome of the said action, nor connected with nor  
15 related to any of the parties in said action, nor to  
16 their respective counsel.

17 IN WITNESS WHEREOF, I have hereunto set my hand  
18 this 10th day of February 2022.

19 Reading and Signing was:

20   x   requested        waived        not requested.  
21

22   
23

24 BRIDGET LOMBARDOZZI, CSR, RMR, CRR  
25

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CERTIFICATE OF WITNESS

I, PETER ADRIAENS, do hereby declare under penalty of perjury that I have read the entire foregoing transcript of my deposition testimony, or the same has been read to me, and certify that it is a true, correct and complete transcript of my testimony given on February 8, 2022, save and except for changes and/or corrections, if any, as indicated by me on the attached Errata Sheet, with the understanding that I offer these changes and/or corrections as if still under oath.

\_\_\_\_\_ I have made corrections to my deposition.

\_\_\_\_\_ I have NOT made any changes to my deposition.

Signed: \_\_\_\_\_  
PETER ADRIAENS

Dated this \_\_\_\_\_ day of \_\_\_\_\_ of 20\_\_\_\_.

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## ERRATA SHEET

Deposition of: PETER ADRIAENS

Date taken: FEBRUARY 8, 2022

Case: SEC v. RIPPLE LABS, INC., et al.

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